



LEBANON PEDESTRIAN & BICYCLIST ADVISORY COMMITTEE

JUNE 4, 2024 - 7:00 PM

COUNCIL CHAMBERS, CITY HALL OR
REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE

1. Call to Order

- A. To participate in this meeting, please [join live via Microsoft Teams](#) or call 929-229-5356 (access code: 419 369 929#). If you have trouble accessing this meeting, please [email catheryn.hembree@lebanonnh.gov](mailto:catheryn.hembree@lebanonnh.gov).

2. Approval of Minutes

- A. May 7, 2024

3. Open to the Public

4. Study Items

- A. Guest from SAU - Amy Allen
- B. Safe Road for All - Crosswalk Pilot Projects
- C. Review Complete Streets Policy
- Categorization of streets
- D. Updates from Other Boards
- Planning & Development
 - Planning Board
 - City Council
 - Police Reports
 - Mascoma River Greenway Coalition
 - Class VI Roads
 - Communications Plan

5. Planning Board Application for Review & Comments

- A. **Brickyard One Nominee Trust, 174 Hanover Street Ext (Tax Map 48, Lot 4), 0 Hanover Street Ext (Tax Map 48, Lot 2), 0 Hanover Street Ext (Tax Map 48, Lot 1), and 238 Hanover Street (Tax Map 63, Lot 1), zoned R-1, R-O-1 & R-3:** Site plan review for a proposed 474-unit multi-family residential development totaling +/- 731,600 sq. ft. in size, consisting of 11 buildings together with parking, utilities, landscaping, access, and other related site improvements. **PB2024-22-SPR**

6. Other Business

7. Future Agenda Items

8. Adjournment

The order of agenda items is subject to change.

Meetings are open for in-person and remote attendance. Members of the public that wish to attend remotely may do so by going to LebanonNH.gov/Live where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupts virtual or phone connection(s), the meeting will continue without remote access capabilities.

DRAFT

**PEDESTRIAN & BICYCLIST ADVISORY COMMITTEE
REGULAR MEETING MINUTES
COUNCIL CHAMBERS– CITY HALL &
REMOTE VIA VIRTUAL PLATFORM LebanonNH.gov/LIVE
7:00 PM, MAY 7, 2024**

MEMBERS PRESENT: Colin Smith (Chair); Marie McCormick; Sean Dittrich; Haynes Bunn (remote); Ben Swanson (Alt); Tim Gilbert; Amy Chan (Friends of the Northern Rail Trail representative)

MEMBERS ABSENT: George Sykes (City Council, Alt); Clifton Below (Alt); Jared Toon (Alt); Adams Carroll; Erling Heistad (City Council); John Kelleher

STAFF PRESENT: Catheryn Hembree (Associate Planner), Tad Montgomery and Rod Finley (Department of Public Works)

1) CALL TO ORDER:

Chair Smith called the meeting to order at 7:00 PM.

Ben Swanson sat as a voting member for this meeting.

2) APPROVAL OF MINUTES

A. April 2, 2024

A MOTION was made by Mr. Dittrich to approve the meeting minutes of April 2, 2024, as presented. Seconded by Ms. McCormick.

**The vote on the MOTION was approved by Roll Call: Smith – aye; McCormick – aye; Dittrich – aye; Bunn – abstain; Swanson – aye; and Gilbert – aye; (5-0-1).*

3) OPEN TO THE PUBLIC:

None at this time.

4) STUDY ITEMS

A. Guest from Department of Public Works - Tad Montgomery/E-bike Chargers

Tad Montgomery explained that the e-bike charger project was proposed for grant funding, but this, unfortunately, was not approved. The City will consider this project as part of any excess funding left at the end of the fiscal year. The proposal includes a e-bike charger at the Kilton Library and another elsewhere in the Downtown area. These may be solar powered.

The Committee discussed potential locations for the second charging station.

B. Guest from Department of Public Works - Rod Finley/Repaving, Striping Projects

Rod Finley gave an update on the Miracle Mile paving project. There will be four rapid flashing beacons installed at certain crosswalks after the paving is complete.

There was discussion regarding other striping projects around the City.

C. Review Complete Streets Policy

1
2 The Committee reviewed the updated Complete Streets Best Practices section. The Committee discussed
3 “quiet” street designations. There was also discussion regarding street type outlining for the City.
4

5 D. Updates from Other Boards

- 6
7 • Planning & Development
8

9 Ms. Hembree gave a brief Planning Department update.
10

- 11 • Planning Board
12

13 No updates at this time.
14

- 15 • City Council
16

17 No updates at this time.
18

- 19 • Police Reports
20

21 Ms. Bunn stated that there have been three accidents reported to date this year. One in January, one in
22 February, and one in March. This puts the accident data count ahead of what it was last year at this time.
23

- 24 • Mascoma River Greenway Coalition
25

26 No additional updates at this time.
27

- 28 • Class VI Roads
29

30 Chair Smith stated that the City Council recently set a hearing in early June to review the proposals for
31 the Patch property for Class VI roads that cross it. The proposal is to replace Barden Hill Road with a new
32 Class A trail that will be given to the City in order to replace the current alignment. The southern end will
33 be linked using an existing snowmobile trail that will be used by the City as a connection. This will create
34 a connection from Route 120 to Methodist Hill Road.
35

- 36 • Friends of the Northern Rail Trail
37

38 No updates at this time.
39

- 40 • Communications Plan
41

42 Ms. McCormick stated that Curb the Car Day is still in the works.
43

44 **5) OTHER BUSINESS**
45

46 None at this time.
47

48 **6) FUTURE AGENDA ITEMS**
49

50 None at this time.
51

52 **7) ADJOURNMENT:**

1
2 ***A MOTION was made by Mr. Dittrich to adjourn the meeting. Seconded by Ms. McCormick.***

3
4 ****The vote on the MOTION was approved by Roll Call: Smith – aye; McCormick – aye; Dittrich – aye;***
5 ***Bunn – abstain; Swanson – aye; and Gilbert – aye; (5-0-1).***

6
7 **The meeting was adjourned at 8:54 PM.**

8
9 Respectfully submitted,
10 Kristan Patenaude, Recording Secretary

CITY OF LEDARON APPLICATION FOR

SPECIAL EXCEPTION	☐	☒	SITE PLAN REVIEW
VARIANCE	☐	☐	SUBDIVISION
MOTION FOR REHEARING	☐	☐	LOT LINE ADJUSTMENT
APPEAL OF AN ADMIN. DECISION	☐	☐	CONDITIONAL USE PERMIT

☐ OTHER _____

PROPERTY OWNER (APPLICANT):

NAME: Brickyard One Nominee Trust TEL.#: (617) 834-4441

MAILING ADDRESS: P.O. Box 720, Middleton, MA 01949

E-MAIL ADDRESS: emailmarchese@gmail.com

CO-APPLICANT, AGENT, OR LESSEE:

NAME: TEL.#:

MAILING ADDRESS:

E-MAIL ADDRESS:

PROJECT LOCATION:

TAX MAP #: ⁴⁸₆₃ LOT #: ^{1, 2, & 4}₁ PLOT #: ZONE: R1, RO1, R3

STREET ADDRESS OF PROJECT: 174 Hanover Street Ext. & 238 Hanover Street

IS THIS PROPERTY LOCATED IN THE: **WETLANDS** ☒ YES ☐ NO **HISTORIC DISTRICT** ☐ YES ☒ NO
FLOOD PLAIN ☒ YES ☐ NO

SCOPE OF PROJECT:

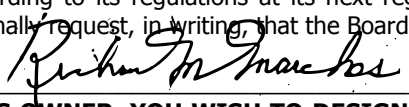
Ten apartment buildings and a combined maintenance shop/property manager's residence are proposed, totaling 474 multifamily residential units with access provided via two full access driveways along Hanover Street.

TYPE OF OCCUPANCY:

EXISTING ☐ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☐ MULTI-FAMILY ☐ COMMERCIAL ☒ INDUSTRIAL
 PROPOSED ☐ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☒ MULTI-FAMILY ☐ COMMERCIAL ☐ INDUSTRIAL
 IF USE IS **COMMERCIAL** OR **INDUSTRIAL**, PLEASE NOTE **SPECIFIC**
 USE: Former brick manufacturing facility

SIGNATURE BLOCK:

FOR PLANNING BOARD APPLICATIONS ONLY: I, the undersigned, hereby submit this application on the date noted below with the knowledge and understanding that the Planning Board shall determine if the submitted application is complete according to its regulations at its next regularly scheduled meeting on June 10, 2024, unless I personally request, in writing, that the Board delay its determination of completeness to a later date.

PROPERTY OWNER:  DATE: May 13, 2024

NOTE: IF, AS OWNER, YOU WISH TO DESIGNATE AN AGENT TO ACT ON YOUR BEHALF, PLEASE READ THE FOLLOWING AND SIGN BELOW: I hereby designate the person listed above as my agent for the purpose of procuring the necessary local permits for the proposed work as described herein. Representations made by my agent may be accepted as though made by me personally, and I understand that I am bound by any official decision made on the basis of such representation.

PROPERTY OWNER: DATE: _____

DATE RECEIVED	FILE # (MAP/LOT)	APPLICATION #	FEE - \$ AMOUNT	DATE PAID	VOUCHER #

Lebanon Brickyard Development

Lebanon, New Hampshire

PREPARED FOR

Richard Marchese
CPO Box 720
Middleton, MA 01949

PREPARED BY



2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900

May 2024

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1

Introduction

Vanasse Hangen Brustlin, Inc. (VHB) has prepared this Traffic Impact Study to summarize the anticipated transportation impacts associated with the proposed Lebanon Brickyard residential development to be located along the west side of Hanover Street in Lebanon, New Hampshire. As proposed, the development program consists of constructing 474 apartment units in 10 four-story buildings. In addition, the project is envisioned to replace the residence at 238 Hanover Street with a structure to contain a single-family residence for the property manager of the Lebanon Brickyard development. Access is proposed via two full access driveways along Hanover Street. The northern driveway will be located to the north of Old Etna Road and the southern driveway will be located across from Evans Drive. The site location in relation to the surrounding roadway network is shown in Figure 1.

New Hampshire Department of Transportation (NHDOT) officials are developing improvements for the NH Route 120 corridor between Hanover Street and Etna Road/Old Etna Road.¹ On December 1, 2023, the project team attended a meeting with City of Lebanon, NHDOT, and Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC) officials to discuss the scope of this traffic study for the proposed Lebanon Brickyard residential development and the NH Route 120 roadway project. During the

¹ www.dot.nh.gov/projects-plans-and-programs/project-center/lebanon-29612

meeting, NHDOT officials stated that an NHDOT permit is not expected to be required for the proposed land development project due to the low traffic increases on the state highway system. Therefore, approval of the proposed residential development with respect to traffic impacts is expected to be required through the local permitting process. This traffic study has been prepared in accordance with the City of Lebanon's Site Plan Regulations (Article V Section 5.1.G.2)² and the scope agreed upon at the December 1, 2023 meeting.

² City of Lebanon, New Hampshire. Site Plan Review Regulations. 23 Jan. 2023.



Site Location Map

Figure 1



0 350 700 Feet



2

Existing Conditions

Existing conditions were developed by conducting field reconnaissance and collecting traffic counts within the vicinity of the site. In preparing this study, the following 'study area' intersections have been analyzed and evaluated:

- › Hanover Street and Evans Drive
- › Hanover Street and Old Etna Road
- › Hanover Street Extension, Heater Road, and Mount Support Road
- › Old Etna Road and Heater Road
- › NH Route 120, Old Etna Road, and Etna Road
- › NH Route 120 and Evans Drive

Within the vicinity of the site, Hanover Street is functionally classified as a Local Roadway, under City of Lebanon jurisdiction, and has a posted speed limit of 25 miles per hour (mph) and a speed limit of 20 mph between 7:00 AM-4:00 PM within the school zone for Hanover Street Elementary School (193 Hanover Street) and Lebanon High School (195 Hanover Street). Directional flows are separated along Hanover Street by double solid line yellow (DSL) centerlines. Land uses consist of residences, Comcast, Hanover Street Elementary School, and Lebanon High School.

There is a sidewalk provided along the east side of Hanover Street starting at Old Etna Road (to the north) that continues over Interstate 89 (I-89) to the south.

Traffic Volumes

Traffic Counts

Base traffic conditions at the study area intersections were developed by conducting turning movement counts (TMCs) and vehicle classification counts on Thursday, November 10, 2022, during the weekday AM peak period (7:00-9:00 AM) and the weekday PM peak period (2:00-6:00 PM). In addition, intersection traffic counts were collected on Saturday, November 12, 2022, during the midday peak period (11:00 AM-1:00 PM). These weekday time periods were selected in order to capture the weekday commuting peak periods³ as well as the student arrival and dismissal periods for Hanover Street Elementary School and Lebanon High School.⁴ In addition, automatic traffic recorder (ATR) counts were conducted along Hanover Street and Evans Drive in the vicinity of the site to collect weekday and Saturday daily traffic volumes and vehicle speed measurements. The traffic count data are provided in the Appendix.

An evaluation of the traffic counts revealed that the study area generally experienced a weekday peak between 7:00-8:00 AM and between 4:30-5:30 PM, and a Saturday peak between 11:00 AM-12:00 PM. Along Hanover Street at the unsignalized intersections with Old Etna Road and with Evans Drive, the influence of the elementary and high school dismissal traffic showed that the weekday afternoon peak occurred between 2:15-3:15 PM and between 2:00-3:00 PM, respectively. Therefore, a supplemental evaluation was conducted at these intersections and the proposed site driveways during the school dismissal time period as provided in the Appendix.

Seasonal Adjustment

Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. Based on NHDOT guidelines for the preparation of a traffic study, existing traffic volumes must represent peak-month conditions. Upon review of seasonal adjustment and historical count data provided by NHDOT at the permanent count station located along NH Route 120 south of Lahaye Drive, traffic volumes in the month of November are approximately 13 percent lower than peak-month volumes (October).⁵ Therefore, the November 2022 traffic counts at the study area intersections were increased by 13 percent to represent 2022 peak-hour traffic volumes during peak-month conditions. The NHDOT seasonal adjustment data are provided in the Appendix.

³ Weekday commuting peak periods typically occur between 7:00-9:00 AM and 4:00-6:00 PM.

⁴ Hanover Street Elementary School: the bell to enter school rang at 8:00 AM and the end of the day bell rang at 3:00 PM. Lebanon High School: Monday-Thursday first bell was at 7:30 AM and the last bell was at 2:35 PM.

⁵ New Hampshire Department of Transportation Bureau of Traffic. Year 2019 Monthly Data, Count Station 02253025: Lebanon – NH Route 120 1 mile south of Hanover Town Line (south of Lahaye Drive).

Pandemic Adjustment

Due to the coronavirus disease 2019 (COVID-19) pandemic, traffic volumes may not represent normal travel conditions along New Hampshire roadways. To determine whether a pandemic adjustment should be made to the 2022 peak-month traffic volumes, NHDOT guidance is to review historical traffic counts from a nearby permanent count station during the month of full data that is nearest to the month of the counts and during that same month prior to the pandemic.⁶ Based on this NHDOT methodology, a comparison of the November 2022 and the November 2019 data from the permanent count station located along NH Route 120 south of Lahaye Drive shows that traffic volumes have decreased by 29.7 percent during the weekday AM peak hour, 19.1 percent during the weekday PM peak hour, and 6.2 percent during the Saturday midday peak hour.

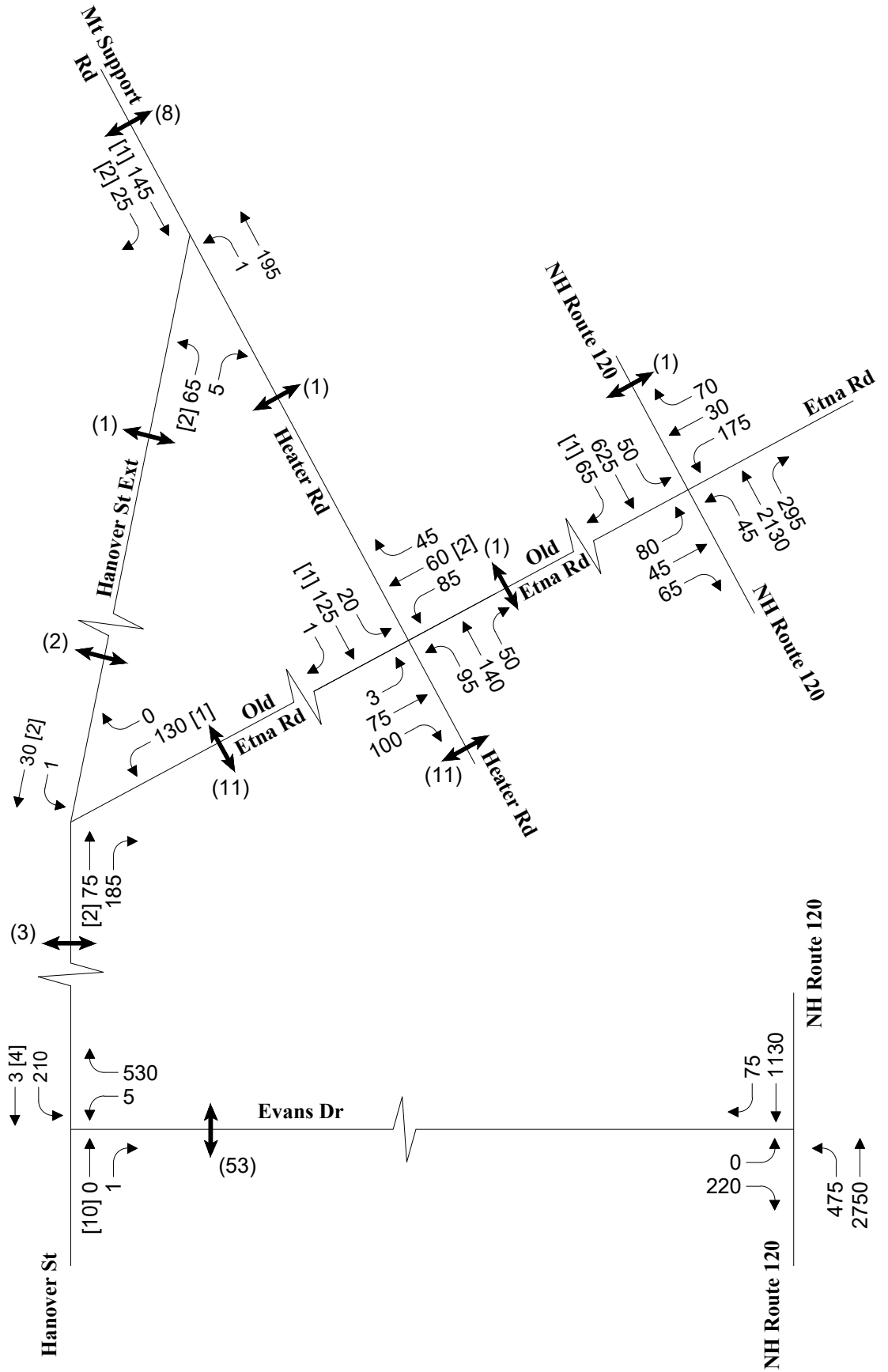
While traffic volumes along NH Route 120 were shown to experience large decreases between November 1999 and November 2022, these same reductions may not have been realized on the nearby local roadway system or on the turns to and from local roadways along NH Route 120 (e.g., Evans Drive) which are mostly influenced by school and Dartmouth Health related traffic. To be consistent with NHDOT methodologies, however, the 2022 peak-month traffic volumes were increased by the same pandemic adjustment factors at all study area intersections which then may accordingly reflect an overestimated baseline scenario at the local intersections.⁷ The November 2022 and November 2019 traffic volume comparison is provided in the Appendix.

Existing Traffic Volume Summary

The 2022 Existing weekday AM, weekday PM, and Saturday midday peak hour transportation volumes (vehicles, pedestrians, and bicycles) are reflected on Figures 2, 3, and 4, respectively. Table 1 provides a summary of the vehicular volumes along Hanover Street and Evans Drive in the vicinity of the proposed development.

⁶ Ibid. 5.

⁷ The 2022 peak-month traffic volumes were increased by 1.147 during the weekday daily period, 1.109 during the Saturday daily basis, 1.297 during the weekday AM peak hour, 1.191 during the weekday PM peak hour, and 1.062 during the Saturday midday peak hour.

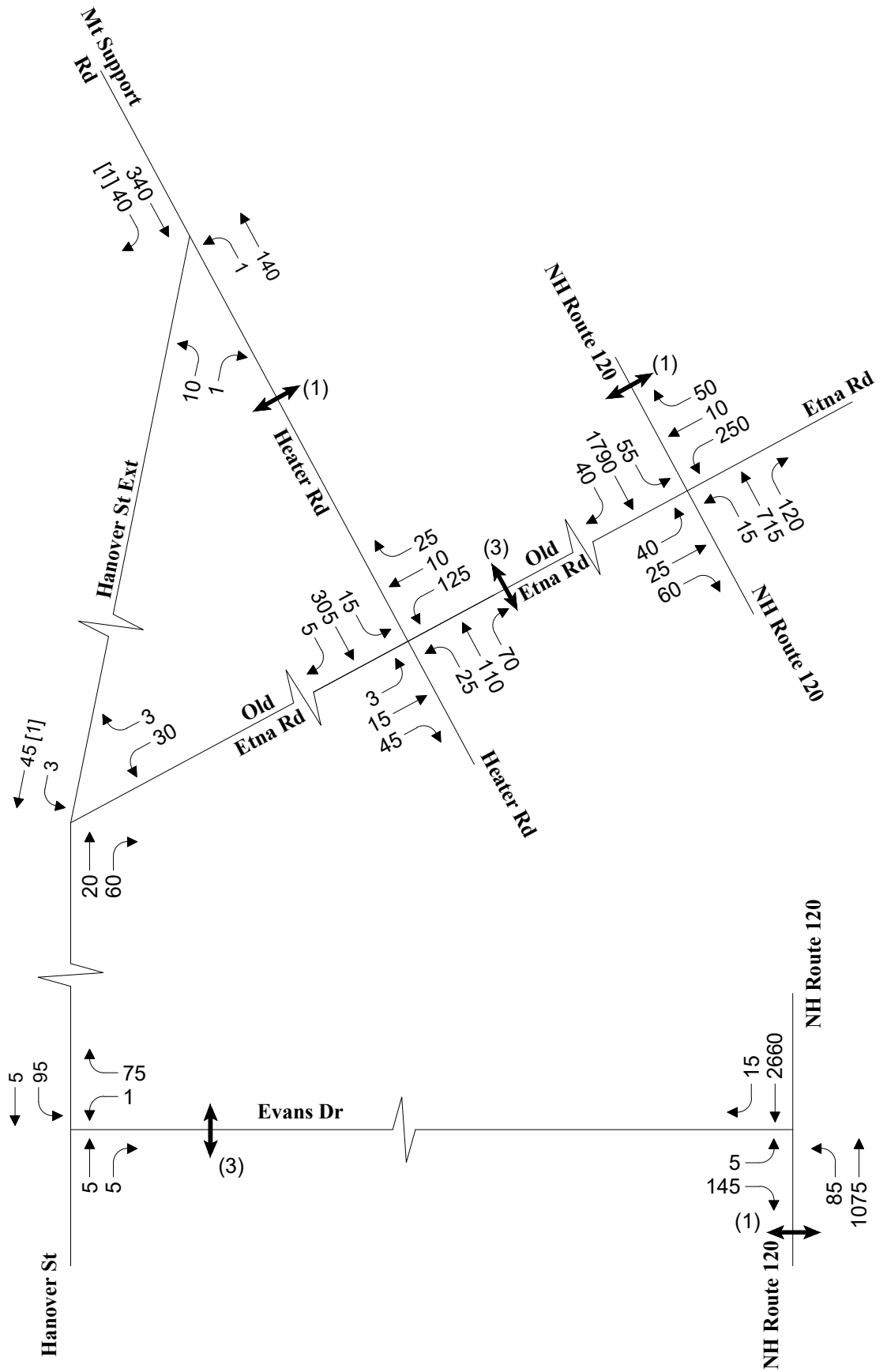


Not to Scale



2022 Existing Weekday Morning
Peak Hour Traffic Volumes

Figure 2



LEGEND

XX = Vehicles
(XX) = Pedestrians
[XX] = Bicycles



Not to Scale



2022 Existing Weekday Evening
Peak Hour Traffic Volumes

Figure 3

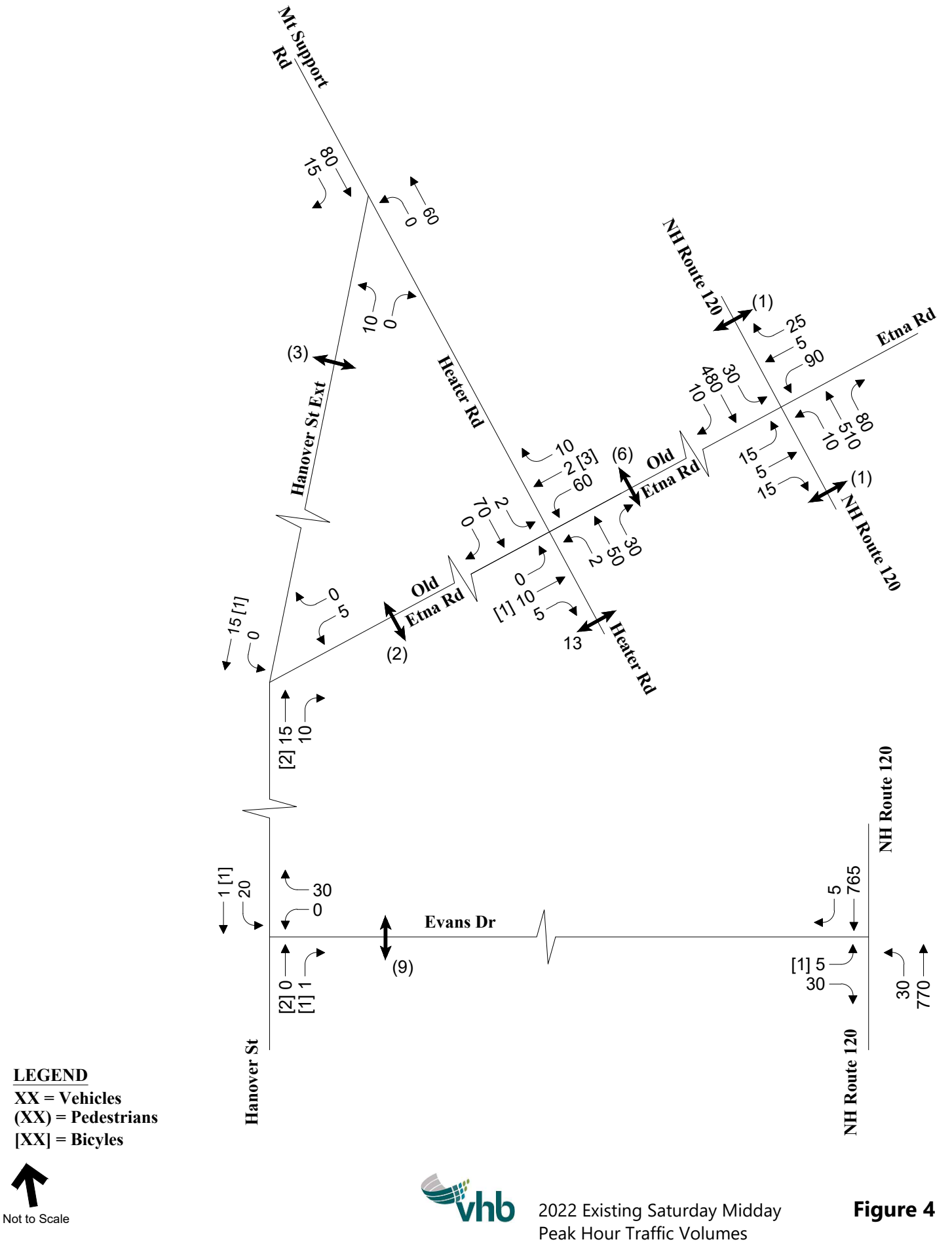


Table 1 Existing Traffic Volume Summary

Location/Time Period	Daily Traffic Volume (vpd) ^a	Peak Hour Traffic Volume (vph) ^b	K-Factor ^c	Directional Distribution ^d
Hanover St north of Evans Dr				
Weekday Daily	2,550			
Weekday AM Peak Hour		740	29.0	71% NB
Weekday PM Peak Hour		180	7.1	56% SB
Saturday Daily	670			
Saturday Midday Peak Hour		50	7.2	60% NB
Evans Dr east of Hanover St				
Weekday Daily	2,655			
Weekday AM Peak Hour		745	28.1	72% WB
Weekday PM Peak Hour		176	6.6	57% EB
Saturday Daily	610			
Saturday Midday Peak Hour		50	8.2	58% WB

- a In vehicles per day. Weekday daily traffic counts seasonally increased by 1.13 and pandemically adjusted by 1.147, and Saturday daily traffic counts seasonally increased by 1.13 and pandemically adjusted by 1.109.
- b In vehicles per hour. Weekday AM peak hour traffic counts increased by 1.13 and pandemically adjusted by 1.297, weekday PM peak hour traffic counts seasonally increased 1.13 and pandemically adjusted by 1.191, and Saturday midday peak hour traffic counts increased by 1.13 and pandemically adjusted by 1.062.
- c Percent of average daily traffic occurring during the peak hour.
- d Predominant traffic flow, with NB = northbound, SB = southbound, EB = eastbound, and WB = westbound.

Many rural and urban roadways experience a K-factor that falls between 9.0 and 10.0 for the weekday commuting time periods. The K-factor may exceed 10.0 for roadways with heavy peak traffic demand.⁸ As shown in Table 1, the K-factor for the weekday AM peak hour is greater than the typical range along rural and urban roadways during the weekday commuting peak hours (28.1 and 29.0 vs. 9.0-10.0), which suggests that these sections of Hanover Street and Evans Drive carried traffic volumes with strong peak demands (i.e., a heavy traffic flow) during the weekday AM time period. These heavier weekday AM traffic volumes coincide with both the commuter peak and the student arrival periods for the nearby elementary and high schools, whereas the weekday PM commuter peak and the student dismissal periods occur at separate times.

Vehicle Speeds

Driving is a self-paced activity where each individual driver controls the speed of their vehicle according to perceived and actual roadway conditions. Posted speed limits provide the legal or allowed maximum travel speed which can be enforced by law enforcement agencies. Table 2 provides statistical data summarized from the speed study conducted along Hanover Street north of Evans Drive and along Evans Drive east of Hanover Street. The average vehicular speed is calculated as the arithmetic mean of the observed vehicle speeds (i.e., the sum of the speeds divided by the number of observations). The 85th percentile speed generally indicates the speed

⁸ Dowling, Richard, et al. Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual. National Cooperative Highway Research Program Report 825, Washington, DC: National Academy of Sciences, 2016.

that most drivers consider safe and reasonable under ideal conditions. The pace speed is the 10-mph range with the greatest number of observations. Additional speed statistics such as the 15th and 95th percentile speeds are provided in the Traffic Count section of the Appendix.

Table 2 Vehicle Speed Summary

Location/Direction	Speed Limit (mph) ^a	Average Speed (mph)	85 th Percentile Speed (mph)	10 mph Pace (mph)
Hanover St north of Evans Dr				
Northbound	20/25	15	18	9-18
Southbound	20/25	16	19	11-20
Combined	20/25	15	18	9-18
Evans Dr east of Hanover St				
Eastbound	20/30	29	32	23-32
Westbound	20/30	27	31	20-29
Combined	20/30	30	32	21-30

^a The speed limit is 20 mph within the School Zones between 7:00 AM-4:30 AM along Hanover Street and during student arrival/dismissal time periods along Evans Drive (when lights are flashing). During other time periods, the posted speed limit along Hanover Street is 25 mph and the enforced speed limit Along Evans Drive is 30 mph.

As shown in Table 2, the vehicle speeds along Evans Drive were found to be higher than those along Hanover Street. The average and 85th percentile speeds along Hanover Street were found to be lower than the 20 mph speed limit within the school zone and the posted speed limit of 25 mph. The speeds along Evans Drive were noted to be slightly higher than the speed limit, with faster vehicle travel speeds in the eastbound direction.

Transit

Within the study area, Heater Road between NH Route 120 and Hanover Street Extension is currently served by public transit in the form of Advance Transit. Advance Transit is a bus service provided for commuters in the Upper Valley region of Vermont and New Hampshire. The Advance Transit Blue Bus Route offers frequent weekday service between Dartmouth College, the Town of Hanover, Dartmouth Health, and the City of Lebanon. In addition, this fixed route service provides several daily trips to the Towns of Enfield and Canaan. The Blue Bus Route is in operation between 5:15 AM and 7:10 PM on weekdays with stops provided within the study area along Heater Road adjacent to Lebanon High School.

Capacity and Queue Analyses

Capacity Analysis Methodology

Intersection operational analyses were performed for the study area intersections with the 2022 Existing weekday AM, weekday PM, and Saturday midday peak hour traffic volumes based on the concepts and procedures in the Highway Capacity Manual (HCM) using the Trafficware Synchro Software computer program. This software program is an NHDOT approved traffic

analysis tool for determining intersection capacity operations. Based on NHDOT guidelines,⁹ HCM 2000 methodologies¹⁰ are preferred for signalized intersections. In addition, HCM 6th edition¹¹ is the NHDOT accepted methodology for unsignalized intersections. Therefore, the HCM 2000 methodologies and procedures have been used to evaluate operations at the NH Route 120, Old Etna Road, and Etna Road signalized intersection and the HCM 6th edition was used for the unsignalized study area intersections.

The analysis results are categorized in terms of Level of Service (LOS), which describes the qualitative intersection operational conditions based on the calculated average delay per vehicle. The criteria for unsignalized intersections are different than for signalized intersections because drivers expect different performance levels from each type of intersection. The relationship between LOS and delay is summarized in Table 3.

Table 3 Level of Service Criteria

LOS	Unsignalized Intersection/ Control Delay (seconds per vehicle) ^a	Signalized Intersection Criteria Average Total Delay (seconds per vehicle)
A	< 10.0	< 10.0
B	10.1 to 15.0	10.1 to 20.0
C	15.1 to 25.0	20.1 to 35.0
D	25.1 to 35.0	35.1 to 55.0
E	35.1 to 50.0	55.1 to 80.0
F	> 50.0	> 80.0

Source: Highway Capacity Manual.

^a LOS F is assigned to a movement if its volume-to-capacity ratio exceeds 1.00 regardless of the control delay.

Queue Length Methodology

The study area intersections were also evaluated with respect to vehicle queuing. For signalized intersections, the quantitative measures of vehicle queue length are defined as the 50th and the 95th percentile queues. The 50th percentile queue represents the average queue length during the peak hour and the 95th percentile queue represents the calculated maximum back of queue that has a probability of 5 percent or less of being exceeded during the peak hour.

For unsignalized intersections, the quantitative measure of vehicle queue length is defined as the 95th percentile queue. The 95th percentile queue represents the percent of time during the peak period being analyzed that the calculated maximum back of queue would be equal to or less than the percentile estimate (i.e., the maximum queue length that would be exceeded only 5 percent of the time). HCM 6th edition methodologies produce queue results in number of

⁹ New Hampshire Department of Transportation Bureau of Traffic. Synchro Inputs Checklist. 16 Aug. 2021.

¹⁰ Transportation Research Board. Highway Capacity Manual 2000. Washington, DC. 16 Jan. 1998.

¹¹ Transportation Research Board. Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis. Washington, DC. 2016

vehicles. Therefore, data presented for unsignalized analyses reflect queues in feet based on standard vehicle spacing of 25 feet per vehicle (front bumper to front bumper).¹²

Intersection Operational Results

The capacity and queue length analysis results are summarized in Table 4 for the 2022 Existing traffic volume conditions. To better understand the effects of the peak-month and pandemic adjustments applied to the November traffic counts, separate intersection analyses were conducted for the study area intersections using the traffic counts without any adjustments. These supplemental analyses were evaluated to replicate typical traffic volume conditions as the study area intersections are influenced by the school and Dartmouth Health traffic and may not be impacted by these factors. The computer-generated analysis reports are provided in the Appendix.

Based on the traffic operational comparison between the 2022 Existing traffic volumes and the November 2022 traffic counts without seasonal and pandemic adjustments, the vehicle queues and delays for the latter analysis are more consistent with what were observed in the field and consistent with initial discussions with local officials. Therefore, the traffic volumes used within this traffic study and the associated intersection analyses are considered to be overestimated (i.e., results in longer delays and vehicle queues than may be realized).

The NH Route 120 signalized intersections with the I-89 southbound ramps, I-89 northbound ramps, Heater Road, and Etna Road/Old Etna Road are contained within an adaptive traffic control system (ATCS) in which traffic signal timings change or adapt based on actual traffic demand. To reflect these ATCS operations, the Synchro computer model was programmed with one coordinated phase per National Transportation Communications for Intelligent Transportation System Protocol (NTCIP) and a maximum recall placed on the coordinated phase on the other side of the ring barrier to signify that these phases would be called every cycle (cannot be skipped). For example, the NH Route 120 southbound through phase (Phase 2) at Etna Road and Old Etna Road represents the coordinated phase (Coordinated Maximum) with the NH Route 120 northbound approach set to maximum recall (Phase 6). In addition, the computer model was calibrated to reflect ATCS operations by adjusting the green time for different signal phases based on observed conditions (i.e., balancing the delays and volume-to-capacity [v/c] ratios for the critical movements by adjusting the green time for separate phases).

As shown, the 2022 Existing weekday AM peak hour conditions reflect long delays experienced on the Evans Drive westbound approach to Hanover Street which are common near schools during the student arrival time period. The NH Route 120 signalized intersection with Etna Road and Old Etna Road operates at with long delays (LOS E) during the weekday AM peak hour. During the weekday AM, weekday PM, and Saturday midday peak hours, long delays are experienced on different lane groups (LOS E and F). In addition, long delays (LOS F) are experienced on the NH Route 120 northbound left-turn lane at the unsignalized intersection with Evans Drive during the weekday AM and PM peak hours. Similarly, the Evans Drive minor street movements experience long delays during the weekday AM and PM peak hours due to the heavy demand of conflicting NH Route 120 traffic. Due to operational constraints along the NH Route 120 corridor, NHDOT officials are in the process of evaluating design alternatives as described within the Planned Roadway Improvements section of this Traffic Impact Study.

¹² Institute of Transportation Engineers. Traffic Engineering Handbook, 7th ed. John Wiley & Sons, Inc. Hoboken, NJ. Jan. 2016.

Table 4 Capacity Analysis Summary 2022 Existing Conditions

Intersection/Peak Hour/ Critical Movement or Lane Group	2022 Existing					2022 Existing without Adjustments				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Hanover Street and Evans Drive										
<i>Weekday AM</i>										
Evans Dr WB Approach	0.98	44.8	E	--	425	0.66	16.1	C	--	130
Hanover St SB Left	0.20	7.8	A	--	18	0.13	7.6	A	--	12
<i>Weekday PM</i>										
Evans Dr WB Approach	0.09	8.8	A	--	8	0.06	8.6	A	--	5
Hanover St SB Left	0.08	7.4	A	--	8	0.06	7.4	A	--	5
<i>Saturday Midday</i>										
Evans Dr WB Approach	0.04	8.5	A	--	2	0.04	8.5	A	--	2
Hanover St SB Left	0.02	7.2	A	--	2	0.01	7.2	A	--	0
Hanover Street and Old Etna Road										
<i>Weekday AM</i>										
Old Etna Rd WB Approach	0.31	11.9	B	--	32	0.19	10.4	B	--	18
Hanover St SB Left	0.00	7.9	A	--	0	0.00	7.7	A	--	0
<i>Weekday PM</i>										
Old Etna Rd WB Approach	0.05	9.4	A	--	2	0.04	9.2	A	--	2
Hanover St SB Left	0.00	7.5	A	--	0	0.00	7.4	A	--	0
<i>Saturday Midday</i>										
Old Etna Rd WB Approach	0.01	8.8	A	--	0	0.01	8.8	A	--	0
Hanover St SB Left ^a	--	--	--	--	--	--	--	--	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

^a No vehicles were counted on this movement.

Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2022 Existing					2022 Existing without Adjustments				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Hanover Street Extension, Heater Road, and Mount Support Road										
<i>Weekday AM</i>										
Hanover St Extension EB Approach	0.13	12.1	B	--	12	0.08	10.7	A	--	5
Heater Rd NB Left	0.00	7.7	A	--	0	0.00	7.6	A	--	0
<i>Weekday PM</i>										
Hanover St Extension EB Approach	0.04	13.2	B	--	2	0.04	11.6	B	--	2
Heater Rd NB Left	0.00	8.5	A	--	0	0.00	8.1	A	--	0
<i>Saturday Midday</i>										
Hanover St Extension EB Approach	0.02	9.6	A	--	2	0.02	9.4	A	--	0
Heater Rd NB Left	0.00	0.0	A	--	0	0.00	0.0	A	--	0

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2022 Existing					2022 Existing without Adjustments				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Old Etna Road and Heater Road										
<i>Weekday AM</i>										
Old Etna Rd EB Approach	0.41	12.9	B	--	50	0.24	9.3	A	--	22
Old Etna Rd WB Approach	0.36	12.5	B	--	40	0.21	9.5	A	--	20
Heater Rd NB Approach	0.55	15.6	C	--	82	0.32	10.3	B	--	35
Heater Rd SB Approach	0.38	12.9	B	--	45	0.22	9.6	A	--	20
<i>Weekday PM</i>										
Old Etna Rd EB Approach	0.22	10.4	B	--	20	0.14	8.8	A	--	12
Old Etna Rd WB Approach	0.29	11.6	B	--	30	0.18	9.6	A	--	15
Heater Rd NB Approach	0.40	12.0	B	--	48	0.26	9.4	A	--	25
Heater Rd SB Approach	0.63	17.0	C	--	112	0.42	11.2	B	--	50
<i>Saturday Midday</i>										
Old Etna Rd EB Approach	0.03	7.3	A	--	2	0.03	7.3	A	--	2
Old Etna Rd WB Approach	0.11	8.0	A	--	10	0.09	7.8	A	--	8
Heater Rd NB Approach	0.12	7.6	A	--	10	0.11	7.5	A	--	10
Heater Rd SB Approach	0.10	7.7	A	--	8	0.08	7.6	A	--	8

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2022 Existing					2022 Existing without Adjustments				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120, Old Etna Road, and Etna Road										
<i>Weekday AM</i>										
Old Etna Rd EB Left	0.90	>100.0	F	95	169	0.67	76.3	E	64	102
Old Etna Rd EB Through/Right	0.95	>100.0	F	95	180	0.56	67.8	E	48	90
Etna Rd WB Left	0.86	>100.0	F	106	224	0.67	75.7	E	69	133
Etna Rd WB Left/Through/Right	0.90	>100.0	F	112	247	0.66	75.1	E	70	137
Etna Rd WB Right	0.05	47.7	D	0	43	0.03	50.1	D	0	12
NH Route 120 NB Left	0.62	74.6	E	47	88	0.45	66.9	E	31	65
NH Route 120 NB Through	1.11	83.5	F	1,370	1,380	0.73	18.0	B	538	595
NH Route 120 NB Right	0.22	7.1	A	3	12	0.15	6.0	A	0	8
NB Route 120 SB Left	0.59	70.0	E	52	97	0.51	67.6	E	37	74
NH Route 120 SB Through/Right	0.36	12.4	B	173	202	0.24	9.9	A	103	130
Overall Intersection	1.04	66.9	E	--	--	0.71	23.2	C	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2022 Existing					2022 Existing without Adjustments				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120, Old Etna Road, and Etna Road										
<i>Weekday PM</i>										
Old Etna Rd EB Left	0.44	64.5	E	43	78	0.37	64.8	E	32	63
Old Etna Rd EB Through/Right	0.36	64.0	E	29	76	0.30	64.3	E	21	64
Etna Rd WB Left	0.74	71.0	E	144	207	0.68	68.7	E	109	164
Etna Rd WB Left/Through/Right	0.77	75.0	E	151	218	0.70	71.3	E	113	171
Etna Rd WB Right	0.03	42.8	D	0	17	0.03	45.8	D	0	9
NH Route 120 NB Left	0.46	71.3	E	14	40	0.33	70.0	E	10	32
NH Route 120 NB Through	0.36	15.5	B	186	282	0.25	12.1	B	115	188
NH Route 120 NB Right	0.08	6.1	A	0	10	0.06	5.5	A	0	8
NB Route 120 SB Left	0.60	71.4	E	51	98	0.48	66.5	E	37	76
NH Route 120 SB Through/Right	0.85	25.5	C	554	1,098	0.60	15.1	B	283	564
Overall Intersection	0.82	29.9	C	--	--	0.61	23.0	C	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2022 Existing					2022 Existing without Adjustments				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120, Old Etna Road, and Etna Road										
<i>Saturday Midday</i>										
Old Etna Rd EB Left	0.30	66.5	E	18	38	0.27	67.9	E	12	29
Old Etna Rd EB Through/Right	0.13	65.4	E	6	29	0.16	67.2	E	6	27
Etna Rd WB Left	0.51	64.9	E	51	96	0.46	64.8	E	42	84
Etna Rd WB Left/Through/Right	0.53	65.9	E	52	100	0.47	64.9	E	43	86
Etna Rd WB Right	0.02	50.5	D	0	0	0.01	51.4	D	0	0
NH Route 120 NB Left	0.33	70.0	E	10	32	0.40	75.3	E	5	21
NH Route 120 NB Through	0.23	8.6	A	98	154	0.19	7.4	A	76	120
NH Route 120 NB Right	0.06	4.6	A	0	7	0.04	4.2	A	0	6
NB Route 120 SB Left	0.41	66.6	E	28	62	0.36	66.5	E	23	56
NH Route 120 SB Through/Right	0.20	7.3	A	58	130	0.16	5.8	A	45	101
Overall Intersection	0.27	16.9	B	--	--	0.22	15.4	B	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2022 Existing					2022 Existing without Adjustments				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120 and Evans Drive										
<i>Weekday AM</i>										
NH Route 120 NB Left	1.01	68.3	F	--	358	0.24	8.0	A	--	22
Evans Dr EB Left ^a	--	--	--	--	--	--	--	--	--	--
Evans Dr EB Right	0.74	34.3	D	--	148	0.20	9.3	A	--	18
<i>Weekday PM</i>										
NH Route 120 NB Left	0.68	79.5	F	--	92	0.26	24.5	C	--	25
Evans Dr EB Left	> 1.20	> 100.0	F	--	45	0.42	> 100.0	F	--	28
Evans Dr EB Right	> 1.20	> 100.0	F	--	278	0.58	41.5	E	--	80
<i>Saturday Midday</i>										
NH Route 120 NB Left	0.04	9.5	A	--	2	0.03	9.0	A	--	2
Evans Dr EB Left	0.04	28.4	D	--	2	0.02	21.5	C	--	2
Evans Dr EB Right	0.06	11.3	B	--	5	0.04	10.6	B	--	2

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

^a No vehicles were counted on this movement.



3

Future Conditions

The impact of site-generated traffic within the study area has been evaluated under two design horizons: 2025 and 2035 traffic volume conditions. Traffic volumes on the roadway network would include existing traffic, new traffic due to normal traffic growth, and traffic related to significant development by others that are expected to be completed within the design horizons. The 2025 design horizon represents opening conditions for the proposed development that can determine the project's traffic impacts, whereas the opening year conditions plus 10 years (2035) is typically used for planning purposes. Consideration of these factors resulted in the development of 2025 and 2035 No-Build traffic volumes, which assume the proposed project is not built. The incremental impacts of the proposed development may then be determined by adding site-generated traffic volumes (Build conditions) and making comparisons to the baseline (No-Build) conditions.

No-Build Conditions

Traffic growth is a function of the expected land development in a region. To predict a rate at which traffic can be expected to grow during the forecast periods, both historical growth and planned areas developments were examined.

Historical Growth

An annual average traffic-growth percentage was determined based on NHDOT historical traffic volume data. A review of NHDOT permanent count station along NH Route 120 in Lebanon

revealed that traffic volumes experienced an annual increase of 0.07 percent between 2009 and 2019.¹³ Consistent with NHDOT preference, a minimum of a 1.00 percent compounded annual growth rate was used to account for general population growth and traffic generated by smaller area developments. The 1.0 compounded annual growth rate was applied to the traffic volumes along the NH Route 120 corridor and not along the local roadway system as these movements are projected to be impacted by specific land development projects and not by general population growth. The NHDOT permanent count station data are provided in the Appendix.

Background Developments

Traffic to be generated by planned developments anticipated to add substantial traffic volumes through the study area were considered in projecting future traffic volumes. Based on discussions with City of Lebanon Planning & Development staff, the following projects were identified:

- › The Dartmouth Health patient tower expansion project.
 - A new patient tower will be constructed to support 233,500 square feet of gross floor area and 128 beds on four levels. These site trips were obtained from the traffic study prepared for that project.¹⁴
- › Mount Support Road residential developments.
 - The Marek at Lebanon, NH is a 250-unit multifamily development to be constructed at 343 Mount Support Road in Lebanon. These site trips were obtained from the traffic study prepared for that project.¹⁵
 - A 309-unit multifamily residential development to be constructed at 401 Mount Support Road in Lebanon. At the time of the November 2022 traffic counts collected as part of the Lebanon Brickyard residential development, approximately 96 percent of the units were occupied.¹⁶ Based on the trip-generation methodologies provided within that traffic study,¹⁷ the remaining 4 percent of the residential units represent between 4 and 6 vehicles per hour during the weekday AM, weekday PM, and Saturday midday peak hours. Therefore, these minimal trips were considered to be accounted for within the 1.0 percent annual growth rate.
 - A 202-apartment unit development to be constructed at 402 Mount Support Road in Lebanon. These site trips were obtained from the traffic study prepared for that project.¹⁸
- › Redevelopment of Village Marketplace.
 - The redevelopment of the Village Marketplace site at 2 Mascoma Street in Lebanon is to include 152 residential dwelling units. Based on a review of the traffic study¹⁹ prepared for that project, the site trips were determined to be accounted for within the 1.0 percent annual growth rate.

¹³ Ibid. 5.

¹⁴ VHB. Traffic Impact and Access Study. Dartmouth Hitchcock Medical Center Expansion, Lebanon, NH. Dec. 2019.

¹⁵ VHB. Traffic Impact Assessment. The Marek at Lebanon, NH: 343 Mount Support Road, Lebanon, New Hampshire. 28 Feb. 2020.

¹⁶ 611 of the 638 bedrooms (~96%) were occupied in November 2022.

¹⁷ VHB. Traffic Impact Assessment. Proposed Multi-Family Housing Development: 401 Mount Support Road, Lebanon, NH. 7 Feb. 2020.

¹⁸ VHB. Traffic Impact Assessment. Proposed Apartment Development: 402 Mount Support Road, Lebanon, NH. 27 Apr. 2020.

¹⁹ Wall Consultant Group. Village Marketplace Redevelopment – Transportation Review, Lebanon, NH. 22 Apr. 2022.

- › Lebanon Woolen Mill residential development.
 - The development consists of replacing a commercial laundry facility, a dry-cleaning plant and retail facility, and an apartment building with 196 apartment units at 1 Foundry Street in Lebanon. Based on a review of the traffic study²⁰ prepared for that project, the site trips were determined to be accounted for within the 1.0 percent annual growth rate.
- › Starbucks restaurant.
 - A Starbucks restaurant with a drive-through window is to be located within Centerra Market Place located off Centerra Parkway in Lebanon. Based on a review of the traffic study²¹ prepared for that project, the site trips were determined to be accounted for within the 1.0 percent annual growth rate.

Planned Roadway Improvements

NHDOT officials are developing improvements along the NH Route 120 corridor between Hanover Street (to the south) and Old Etna Road/Etna Road (to the north). This project (Lebanon 29612) is intended to improve operations, progression, and safety along the corridor that includes the I-89 interchange at Exit 18. During the December 1, 2023 meeting with City of Lebanon, NHDOT, and UVLSRPC officials, NHDOT engineers stated that a preferred alternative has not been determined. Therefore, the proposed geometry identified in Alternative 1 presented at the November 16, 2022 Project Advisory Committee meeting was recommended to be considered to be in place under the 2035 No-Build conditions for the purposes of this Traffic Impact Study. These improvements are subject to change as part of further evaluation and design for the NHDOT roadway project. Within the study area, these improvements consist of the following:

- › NH Route 120 and Evans Drive:
 - Widen the NH Route 120 northbound approach to provide an exclusive left-turn lane and three through lanes (i.e., an additional through lane).
 - Widen the NH Route 120 southbound approach to provide two through lanes and a shared through/right-turn lane (i.e., an additional through lane).
 - Restrict left turns from the Evans Drive westbound approach (i.e., right turns only onto NH Route 120 southbound).
- › NH Route 120, Old Etna Road, and Etna Road:
 - Widen the Old Etna Road eastbound approach to provide an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane (i.e., added an additional through lane and an exclusive right-turn lane).
 - Widen the Etna Road westbound approach to provide two left-turn lanes, a through lane, and an exclusive right-turn lane (i.e., added an additional left-turn lane)

While these improvements are anticipated to improve transportation operations, mobility, and safety along the corridor, an indirect result may be the redistribution of vehicles currently traveling along the Mount Support Road/ Heater Road corridor that avoid the NH Route 120 corridor may change their travel route onto the major highway system. For the purposes of this

²⁰ Wall Consultant Group. Lebanon Woolen Mill Transportation Study, Lebanon, NH. 10 Aug. 2022.

²¹ Vanasse & Associates, Inc. Transportation Impact Assessment. Proposed Starbucks Restaurant, Lebanon, NH. Oct. 2022.

Traffic Impact Study, no vehicles were redistributed from the local corridor onto the state highway system with the NH Route 120 improvements in place.

No-Build Traffic Volumes

The 2025 No-Build peak hour traffic volumes were accordingly developed by applying a 1.0 percent compounded annual traffic growth rate (or 3.0 percent over 3 years) to the 2022 Existing volumes and adding the vehicle trips associated with the Dartmouth Health patient tower expansion project and two residential developments along Mount Support Road. The 2025 No-Build traffic volumes are shown graphically for the study area intersections on Figures 5, 6, and 7 for the weekday AM, weekday PM, and Saturday midday peak hours, respectively.

The 2035 No-Build peak-hour traffic volumes were accordingly developed by applying a 1.0 percent compounded annual traffic growth rate (or 13.8 percent over 13 years) to the 2022 Existing volumes and adding the vehicle trips associated with the Dartmouth Health patient tower expansion project and two residential developments along Mount Support Road. In addition, the NHDOT Alternative 1 improvements being considered as part of the NH Route 120 corridor project were evaluated to be in place. The 2035 No-Build traffic volumes are shown graphically for the study area intersections on Figures 8, 9, and 10 for the weekday AM, weekday PM, and Saturday midday peak hours, respectively.

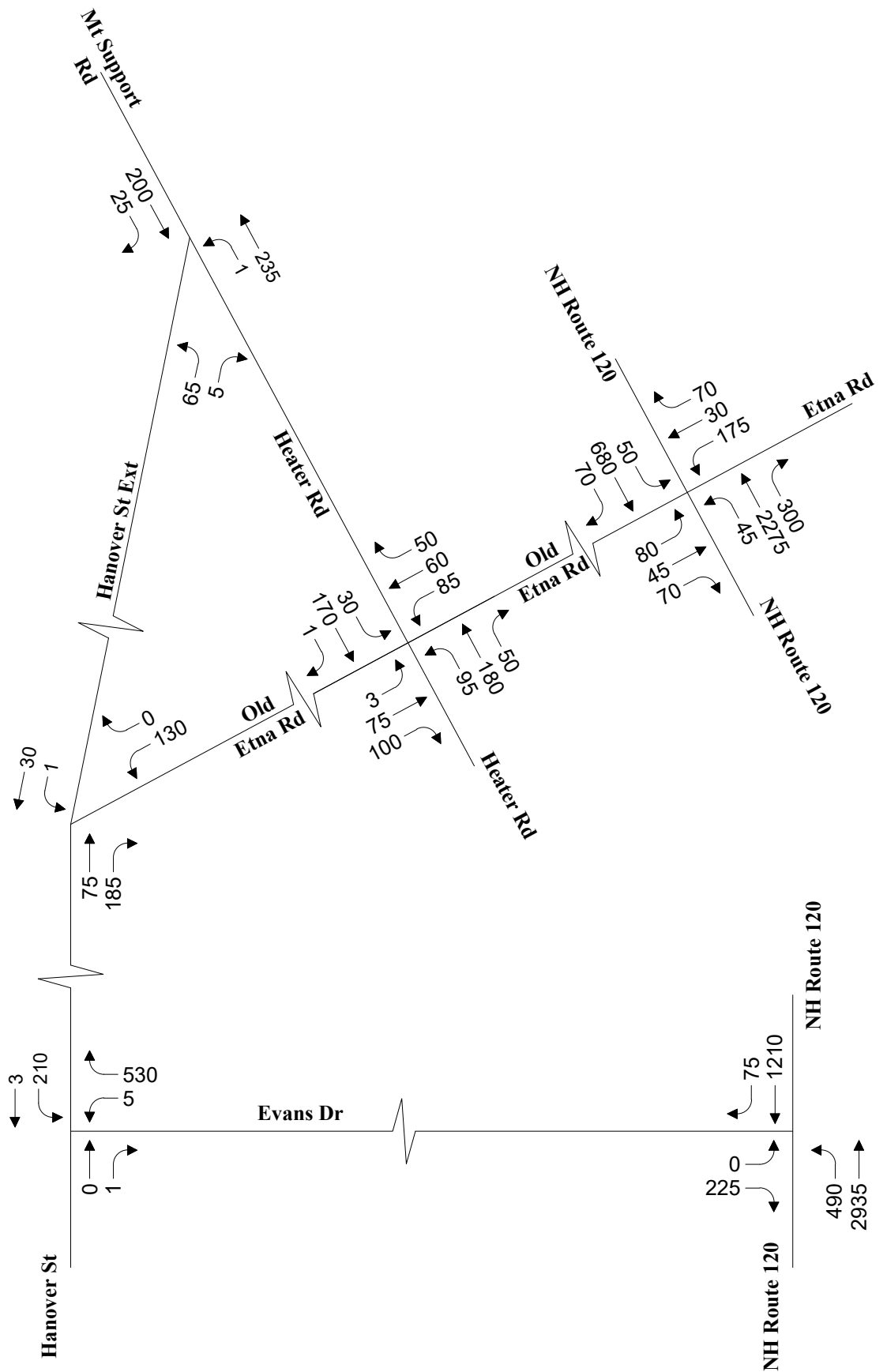
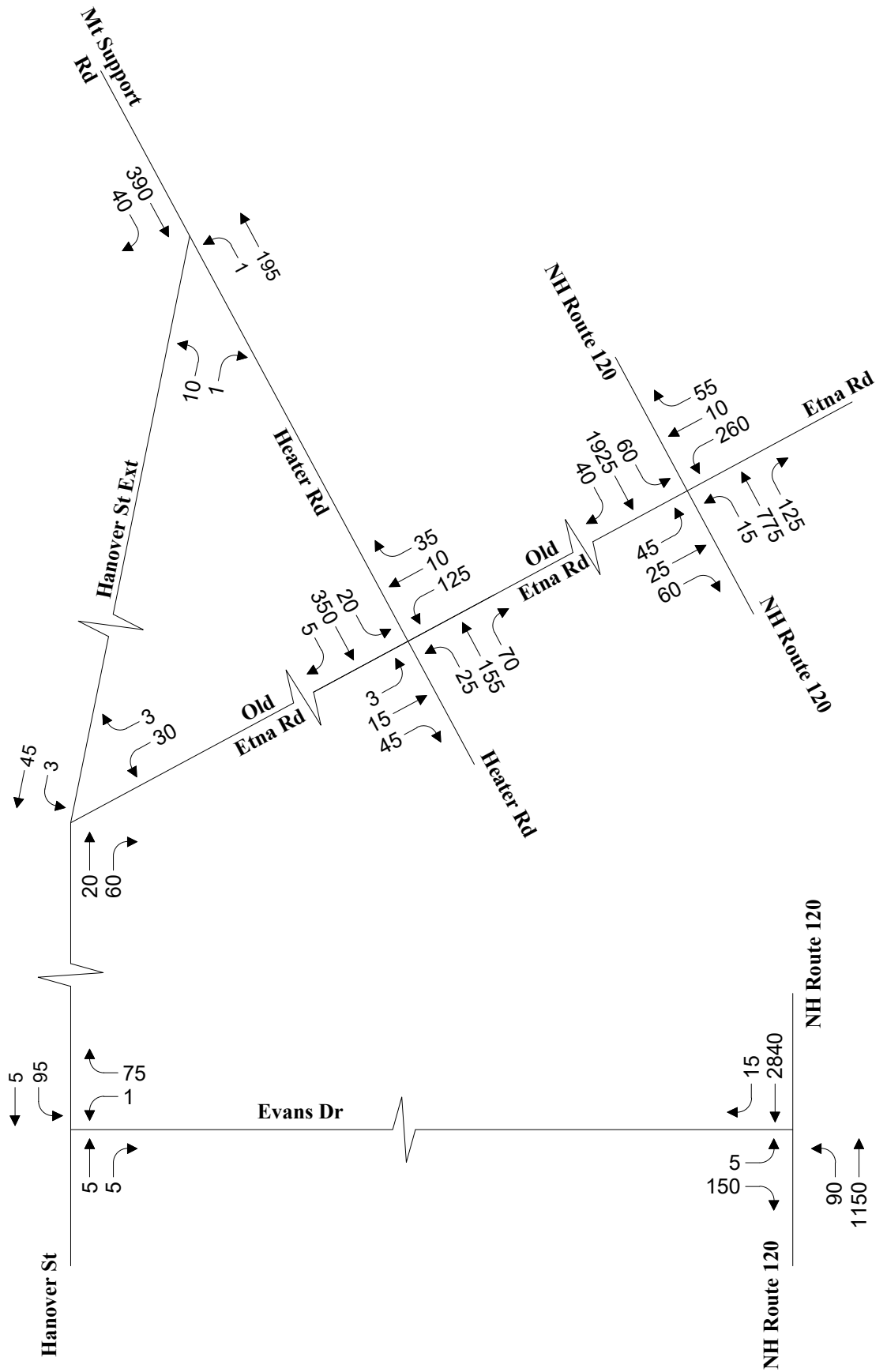


Figure 5

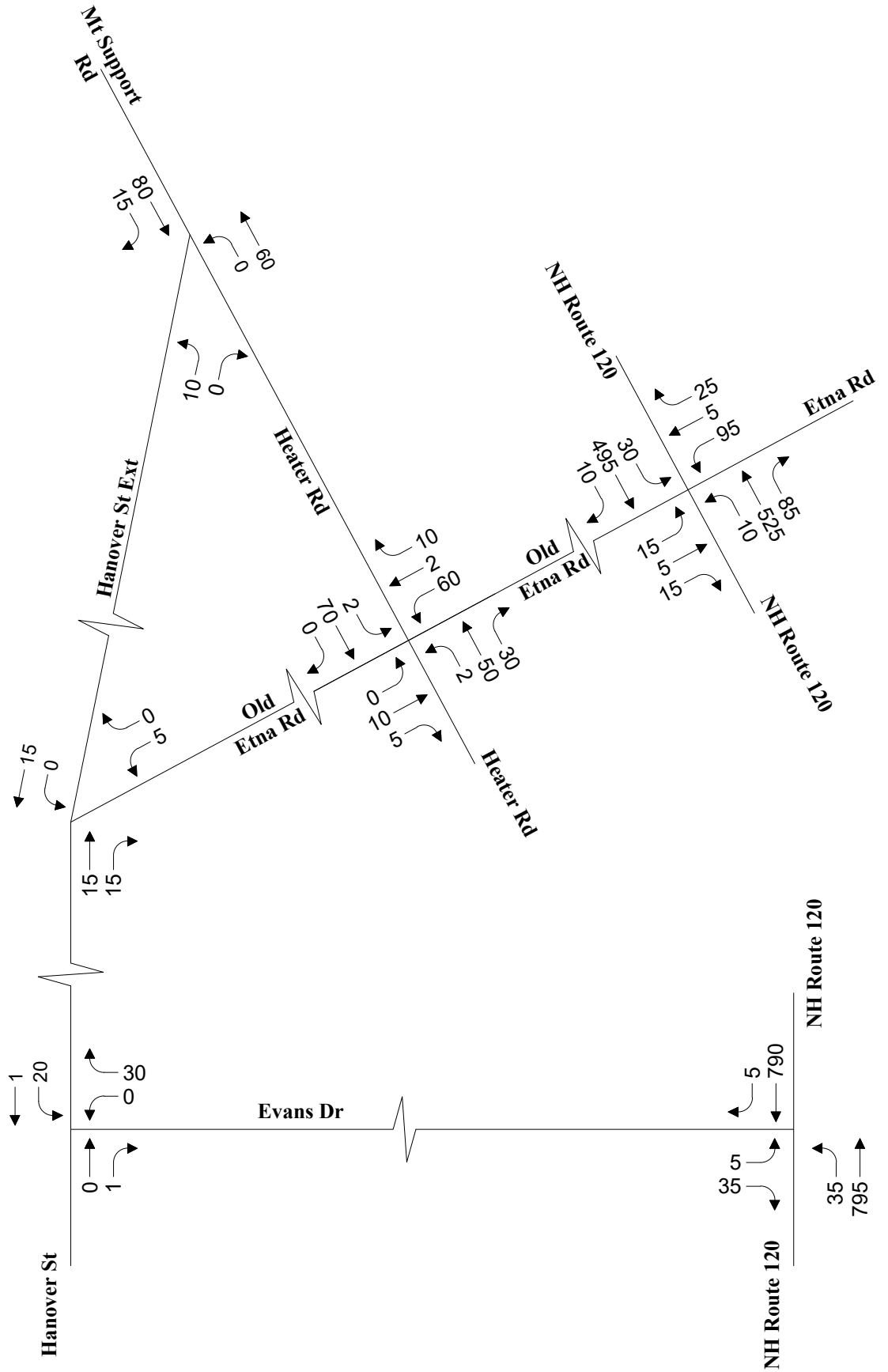


Not to Scale



2025 No-Build Weekday Evening
Peak Hour Traffic Volumes

Figure 6

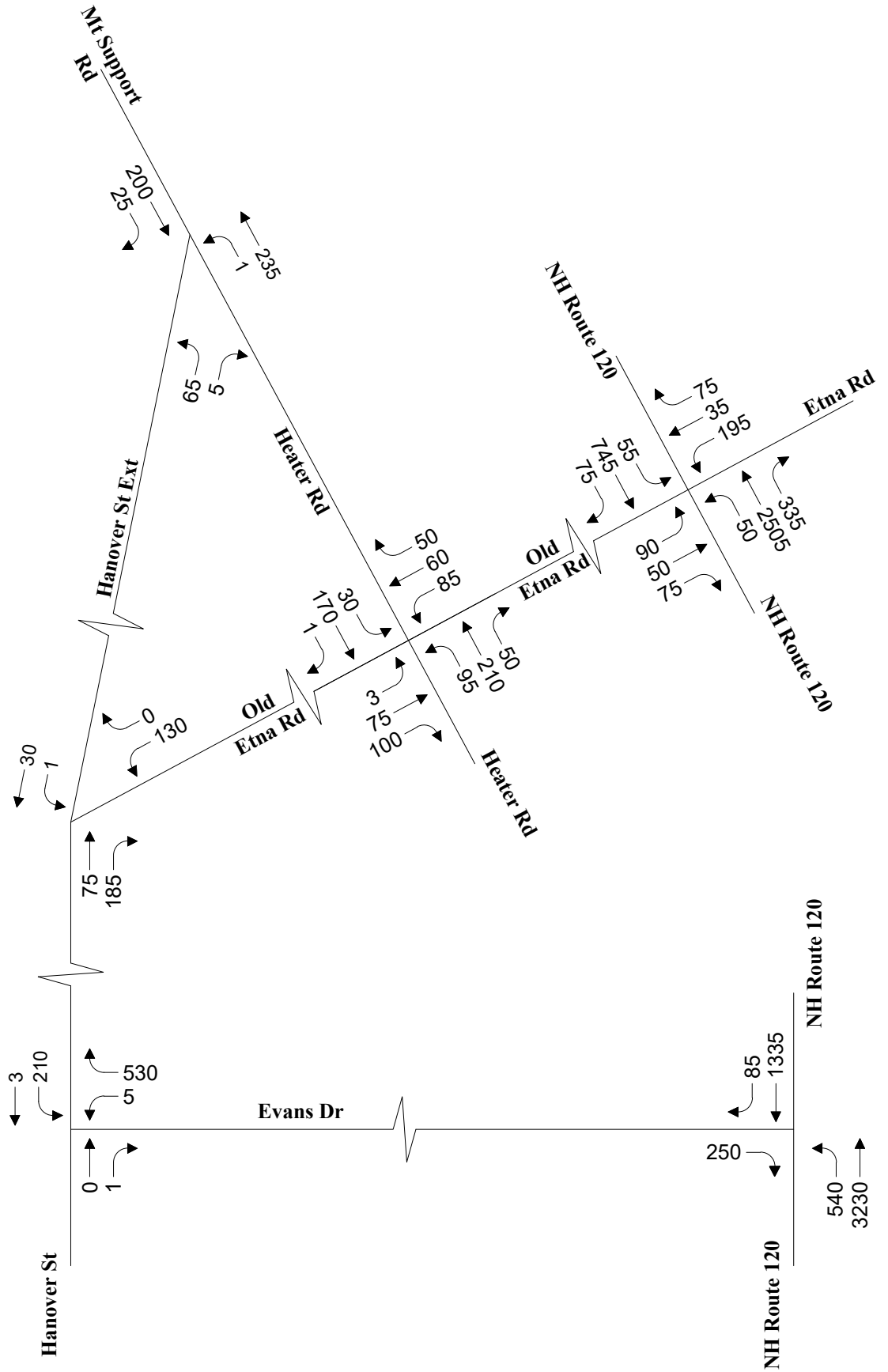


Not to Scale



2025 No-Build Saturday Midday Peak Hour Traffic Volumes

Figure 7

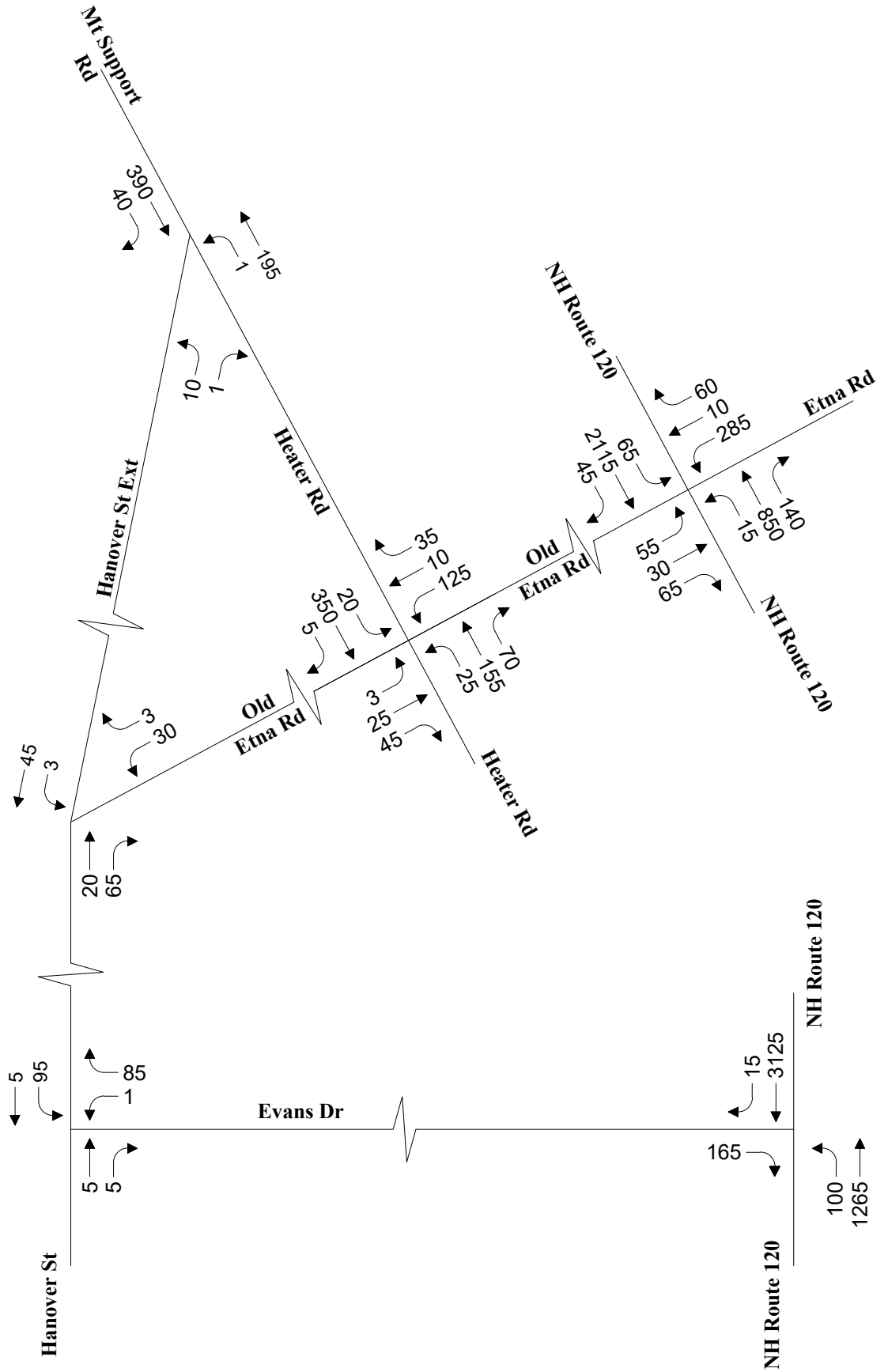


Not to Scale



2035 No-Build Weekday Morning Peak Hour Traffic Volumes

Figure 8

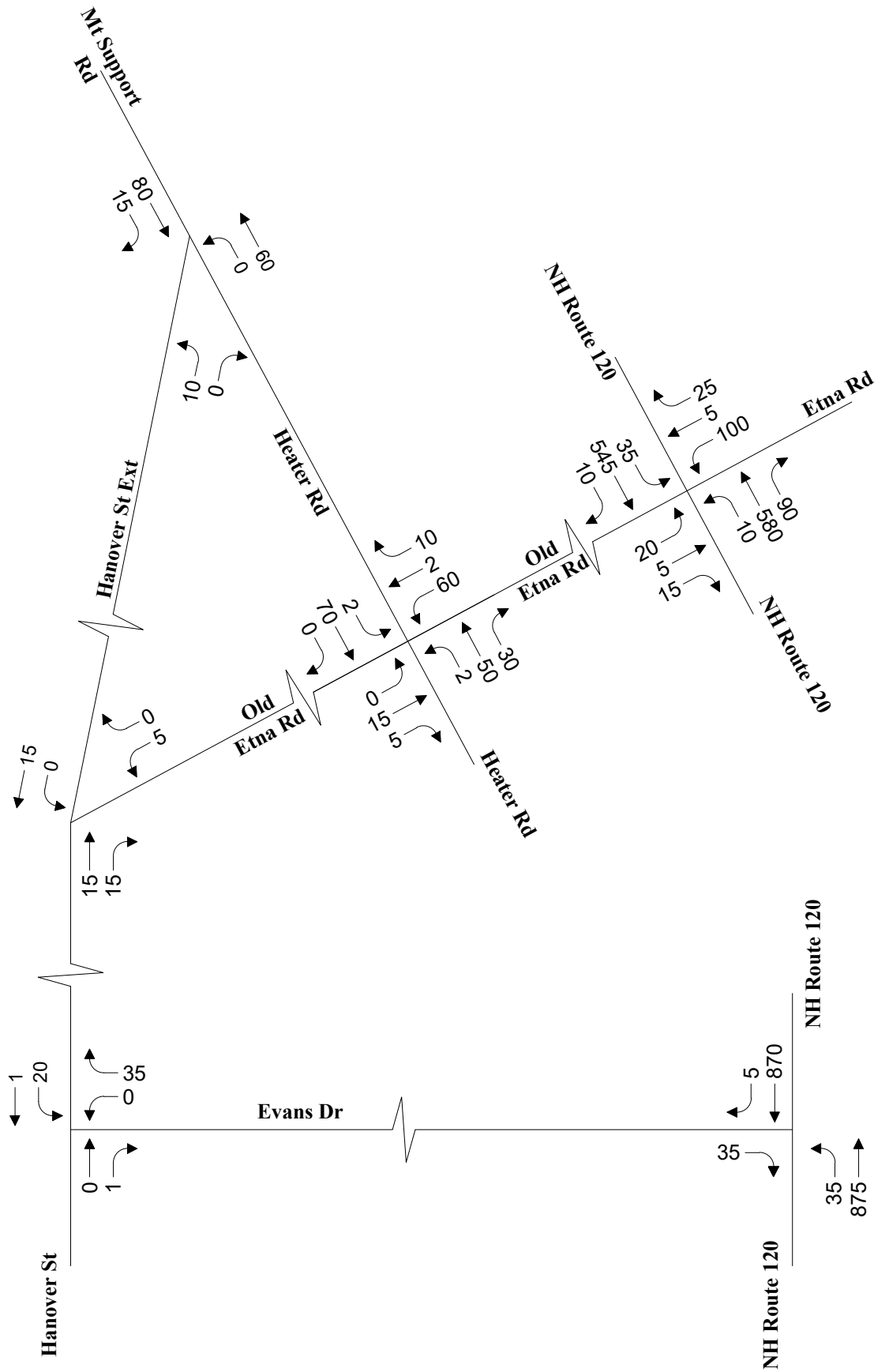


Not to Scale



2035 No-Build Weekday Evening Peak Hour Traffic Volumes

Figure 9



Not to Scale



2035 No-Build Saturday Midday Peak Hour Traffic Volumes

Figure 10

Build Conditions

The proposed development program consists of constructing 474 apartment units in 10 four-story buildings and replacing the residence at 238 Hanover Street with a structure to contain a single-family residence for the property manager of the Lebanon Brickyard development. The property manager is anticipated to remain on-site during the weekday AM, weekday PM, and Saturday midday peak hours and would thus not be expected to generate site trips during these time periods. Access is proposed via two full access driveways along Hanover Street. The northern driveway will be located to the north of Old Etna Road and create a three-legged unsignalized intersection with single travel lanes on the Hanover Street northbound, Hanover Street southbound, and site driveway eastbound approaches. The southern driveway will be located across from Evans Drive to form a standard four-way intersection with single travel lanes on the Hanover Street northbound, Hanover Street southbound, Evans Drive westbound, and site driveway eastbound approaches.

Sight Distance

As proposed, full access driveways will be constructed along the west side of Hanover Street north of Old Etna Road (north site driveway) and across from Evans Drive (south site driveway). Sight distances have been evaluated at the proposed site driveway locations to determine if the available sightlines for vehicles exiting the site meet or exceed the minimum distances required for approaching vehicles to safely stop. The available sight distances were compared with minimum requirements, as established by the American Association of State Highway and Transportation Officials (AASHTO).²² AASHTO is the national standard by which vehicle sight distance is calculated, measured, and reported.

Sight distance is the length of roadway ahead visible to the driver. The Stopping Sight Distance (SSD) is the minimum distance required for a vehicle traveling at a certain speed to safely stop before reaching a stationary object in its path. The Intersection Sight Distance (ISD) is provided on minor street approaches to allow the drivers of stopped vehicles a sufficient view of the major roadway to decide when to enter the major roadway. In accordance with the AASHTO manual, the ISD must be equal to or greater than the minimum required SSD in order to provide safe operations at an intersection to anticipate and avoid collisions.²³ The available SSD and ISD at the proposed site driveway locations were measured and compared to minimum requirements as established by AASHTO. The required minimum sight distances for each speed are shown in Table 5.

As indicated in Table 5, available sight distances to the north and south of the proposed site driveways exceed the AASHTO SSD and ISD minimum requirements. To encourage safe and efficient flow of traffic to and from the site, proposed plantings, vegetation, landscaping, and signing along the site frontage and at the site driveway are recommended to be kept low to the ground or set back sufficiently from the edge of the roadways so as not to inhibit the available sightlines.

²² American Association of State Highway and Transportation Officials. A Policy on Geometric Design of Highways and Streets, 7th ed. Washington, D.C. 2018.

²³ AASHTO, page 9-35.

Table 5 Sight Distance Summary

Location/Condition	Stopping Sight Distance (feet)		Intersection Sight Distance (feet)	
	To/From North	To/From South	To/From North	To/From South
Hanover St North Site Driveway				
Measured	>300	>300	>300	>300
Minimum Required ^a	155	155	155	155
Hanover St South Site Driveway				
Measured	>300	>300	>300	>300
Minimum Required ^a	155	155	155	155

^a Minimum required SSD values based on the posted speed limit (25 mph) and minimum required ISD values are consistent with SSD values. Based on AASHTO Table 9-7.

Trip Generation

To estimate the volume of traffic to be generated by the proposed project, trip rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual²⁴ were researched for Land Use Code 221 (Multifamily Housing [Mid-Rise]). The property manager is anticipated to remain on-site during the weekday AM, weekday PM, and Saturday midday peak hours and would thus not be expected to generate site trips during these time periods. A summary of the ITE trip-generation data is provided in Table 6 with the trip-generation calculations provided in the Appendix.

Table 6 Trip-Generation Summary

Peak Hour/Direction	Site Trips ^a
Weekday AM Peak Hour	
Enter	45
Exit	152
Total	197
Weekday PM Peak Hour	
Enter	113
Exit	72
Total	185
Saturday Midday Peak Hour	
Enter	98
Exit	93
Total	191

^a ITE Land Use Code 221 (Multifamily Housing [Mid-Rise]) for 474 dwelling units.

As shown, the proposed development is projected to generate 197 trips (45 entering and 152 exiting) during the weekday AM peak hour, 185 trips (113 entering and 72 exiting) during

²⁴ Institute of Transportation Engineers. Trip Generation Manual, 11th ed. Washington, DC, Sept. 2021.

the weekday PM peak hour, and 191 trips (97 entering and 93 exiting) during the Saturday midday peak hour. Since the development is estimated to generate more than 100 vehicle trips per hour, Article V Section 5.1.G.2 of the City of Lebanon's Site Plan Review Regulations requires the preparation of a Traffic Impact Study.

Build Traffic Volumes

The directional distribution of the site generated traffic was approximated based on United States Census Bureau data for the City of Lebanon and existing traffic flow patterns within the study area. A summary of the distribution data is provided in the Appendix. Based on the traffic-generation and distribution estimates for the proposed residential development, the site trips were assigned to the adjacent roadway network. The project-generated traffic volumes are shown in Figures 11 through 13.

The project-generated traffic volumes were combined with the No-Build traffic volumes to develop the Build peak-hour traffic-volume networks. The 2025 Build weekday AM, weekday PM, and Saturday midday peak hour traffic volumes are illustrated in Figures 14, 15, and 16, respectively. The 2035 Build weekday AM, weekday PM, and Saturday midday peak hour traffic volumes are illustrated on Figures 17, 18, and 19, respectively.

In accordance with ITE methodologies²⁵ and NHDOT guidance,²⁶ a development estimated to generate 100 vehicles per hour or more through an intersection (total of entering and exiting trips) may result in a change in vehicular operations (i.e., noticeably drop level of service or increase v/c ratios). In general, traffic increases less than this threshold could be attributed to the fluctuation of vehicles due to driver patterns that occur during the day, on different days of the week, or different months of the year. Based on standard traffic engineering practice and methodologies, Figures 11 through 13 show that the proposed development is projected to meet this threshold only at the proposed Hanover Street southern site driveway during the peak hours (119-133 vehicles per hour). Therefore, standard traffic engineering practice suggests that the proposed development would not be expected to result in noticeable impacts to the area roadway system beyond the southern site driveway.

²⁵ ITE Recommended Practice: Multimodal Transportation Impact Analysis for Site Development. Washington, DC: Institute of Transportation Engineers. 2023.

²⁶ Bollinger, Robert E. Inter-Department Communication. New Hampshire Department of Transportation, Bureau of Traffic. 17 Feb. 2010.

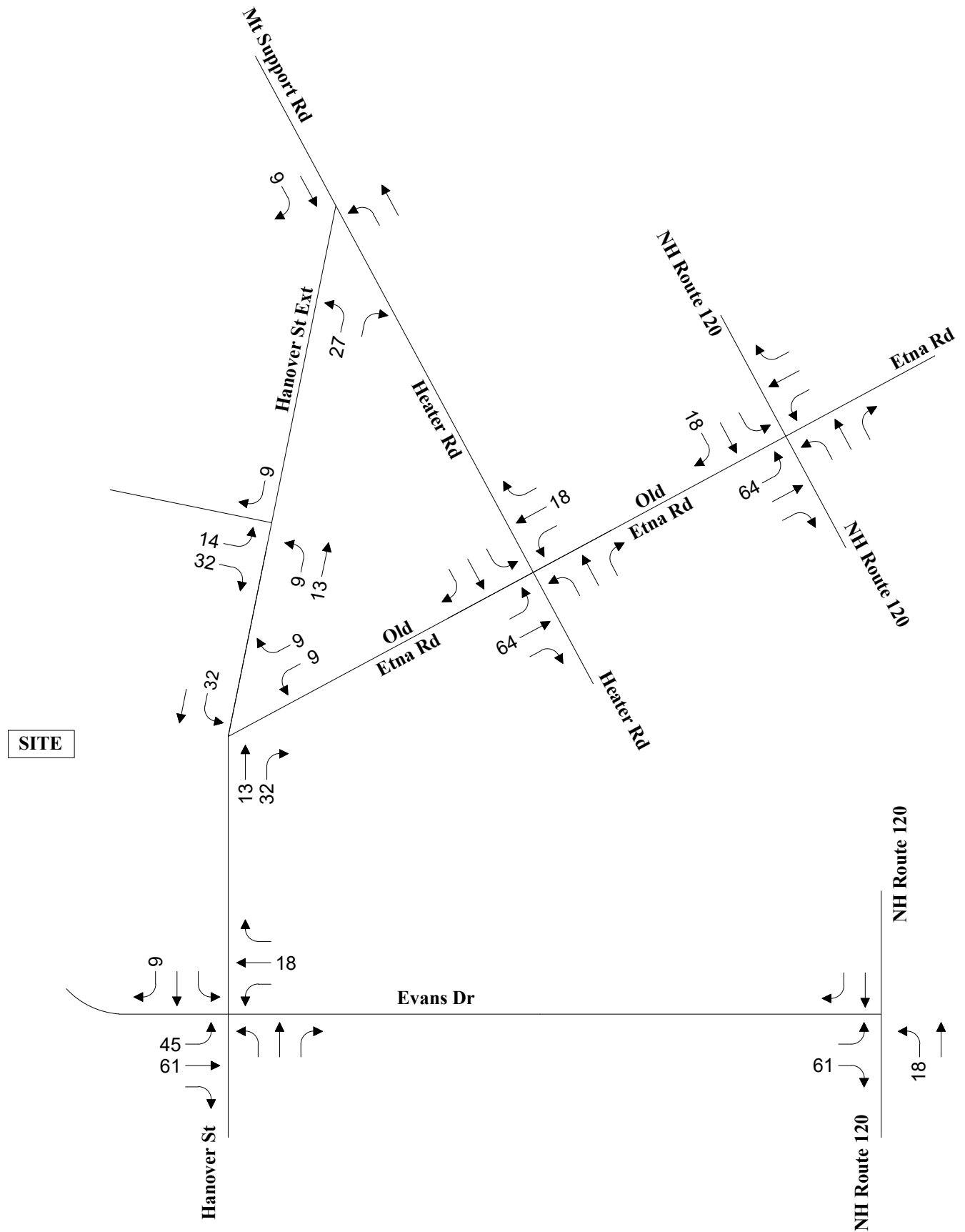
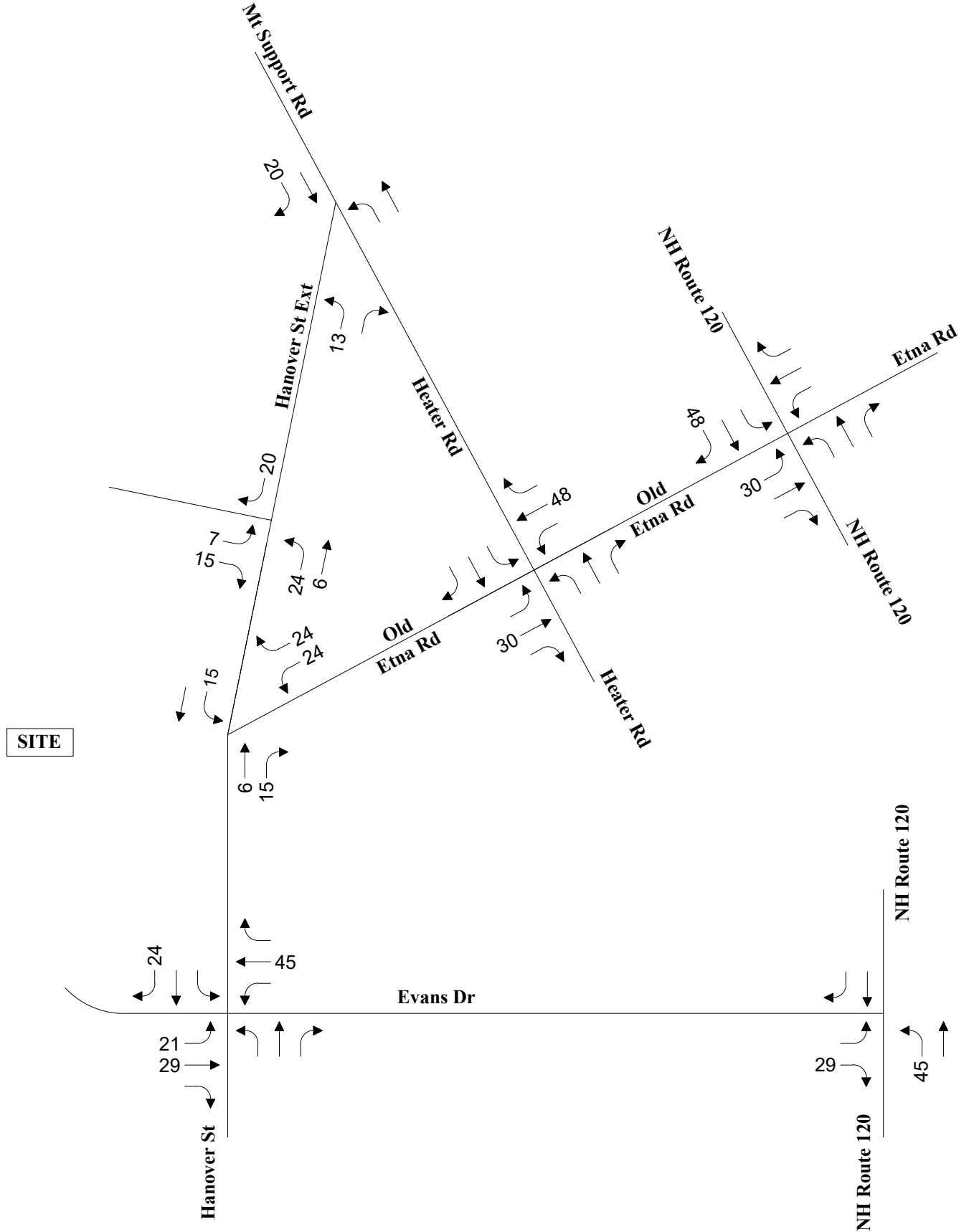


Figure 11

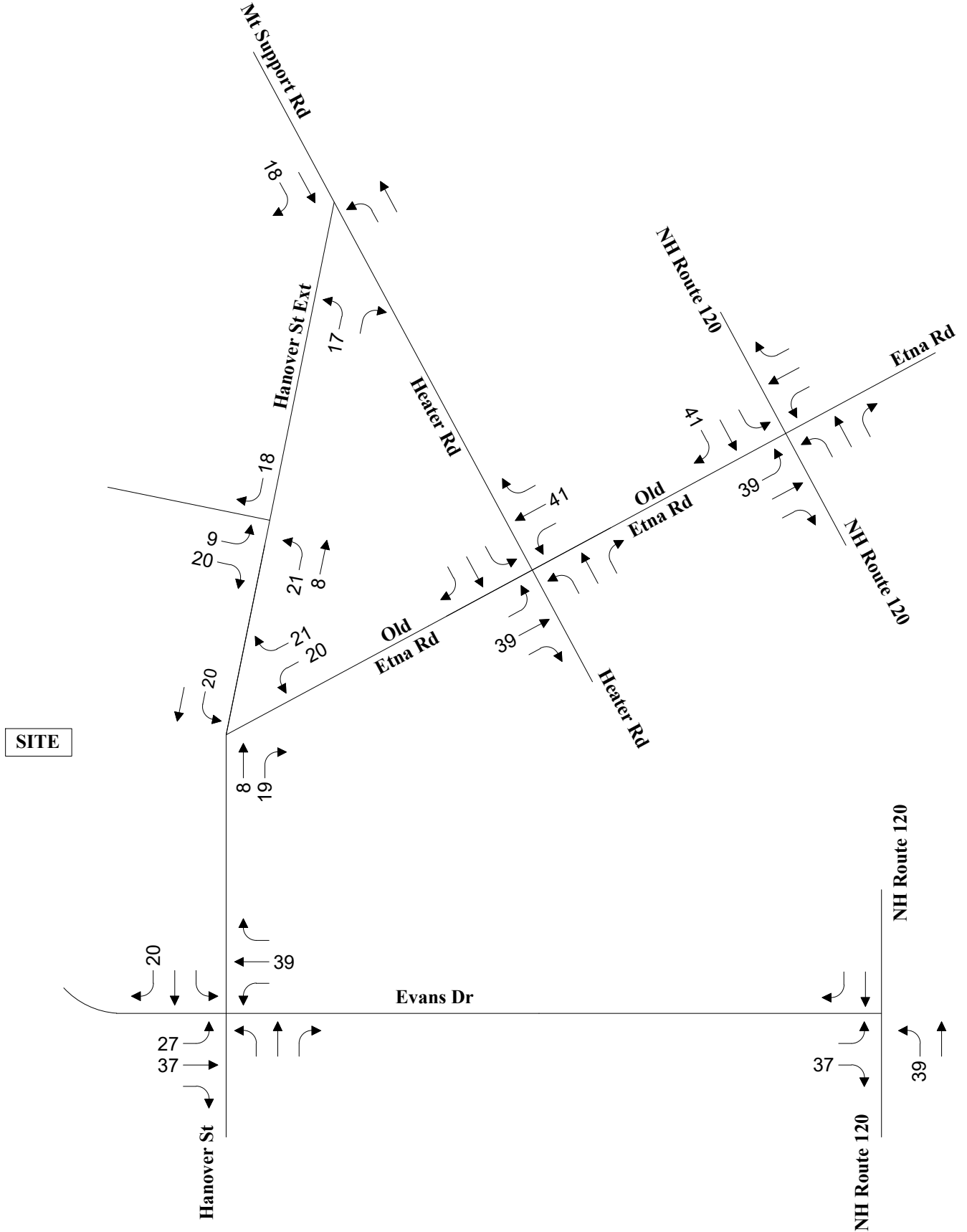


Not to Scale



Site Trips Weekday Evening
Peak Hour Traffic Volumes

Figure 12



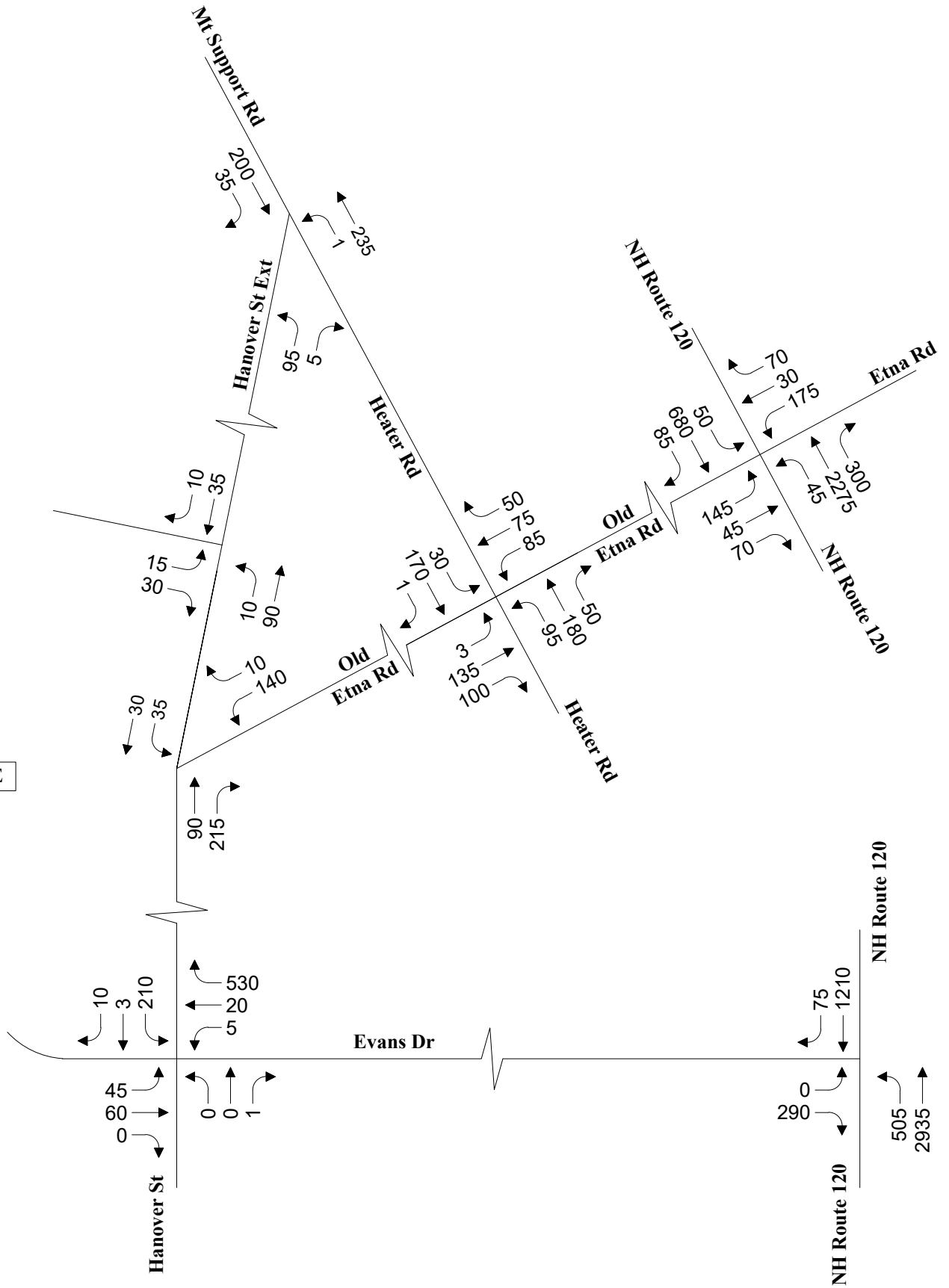
Not to Scale



Site Trips Saturday Midday Peak Hour Traffic Volumes

Figure 13

SITE

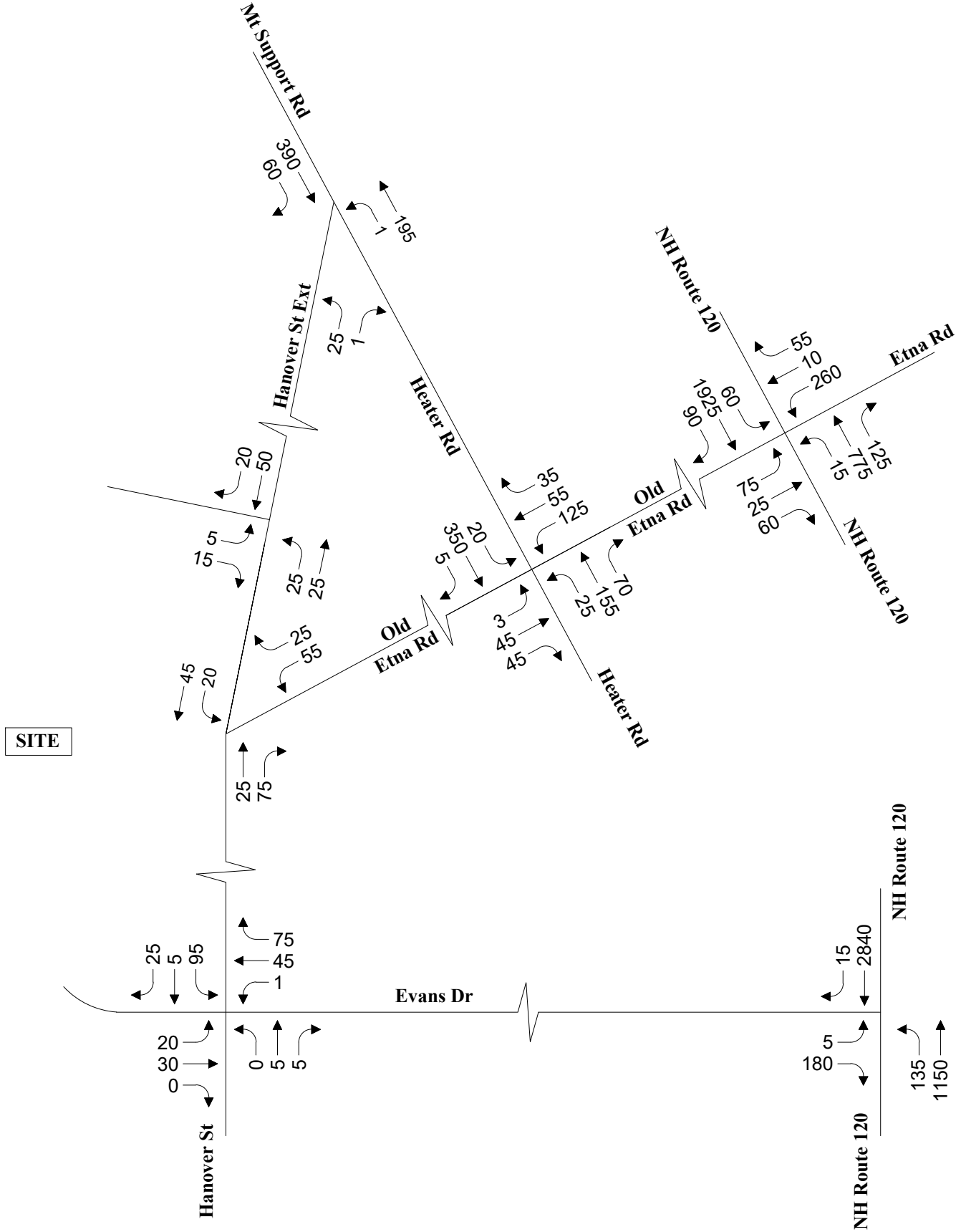


Not to Scale



2025 Build Weekday Morning Peak Hour Traffic Volumes

Figure 14

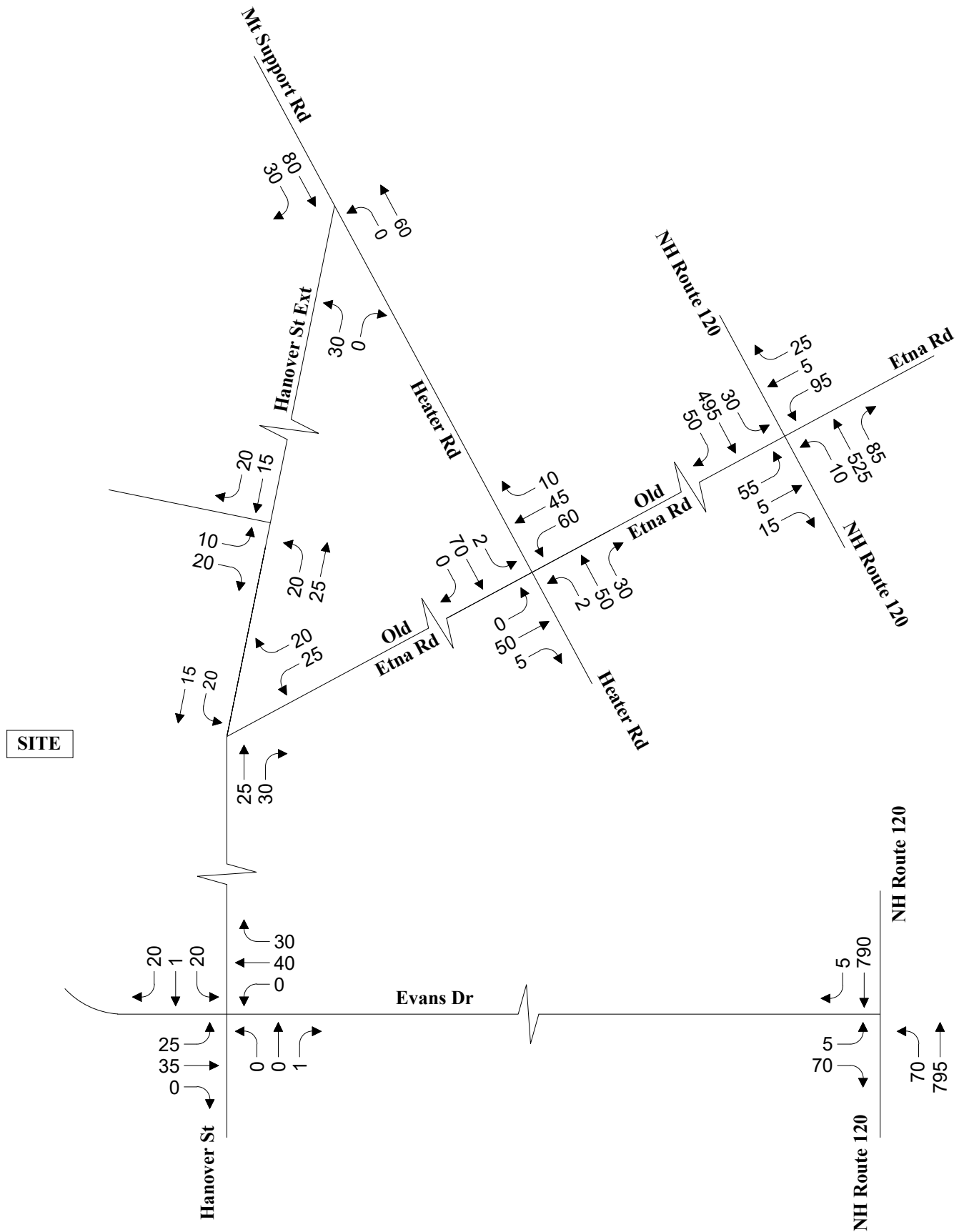


Not to Scale

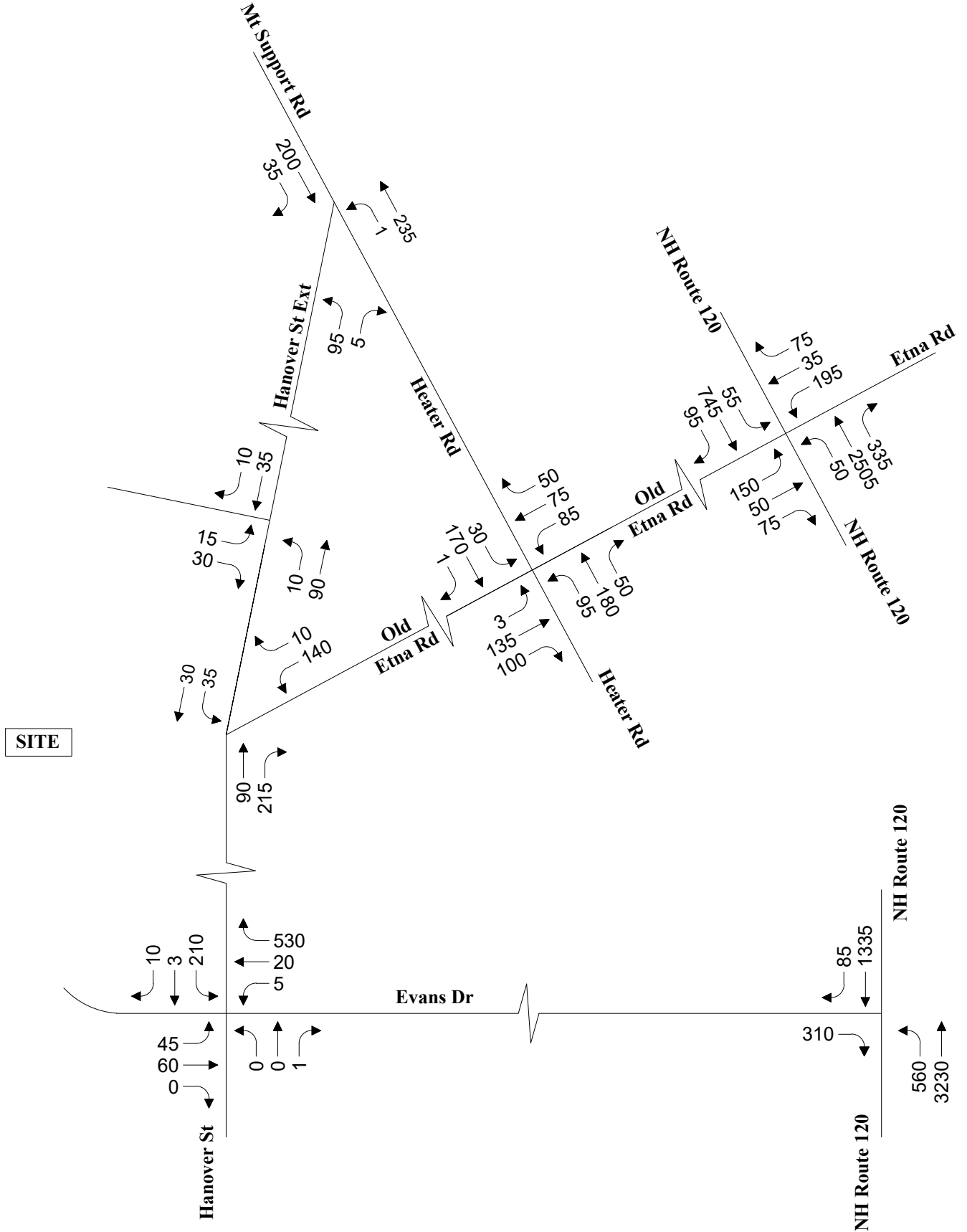


2025 Build Weekday Evening
Peak Hour Traffic Volumes

Figure 15



2025 Build Saturday Midday Peak Hour Traffic Volumes

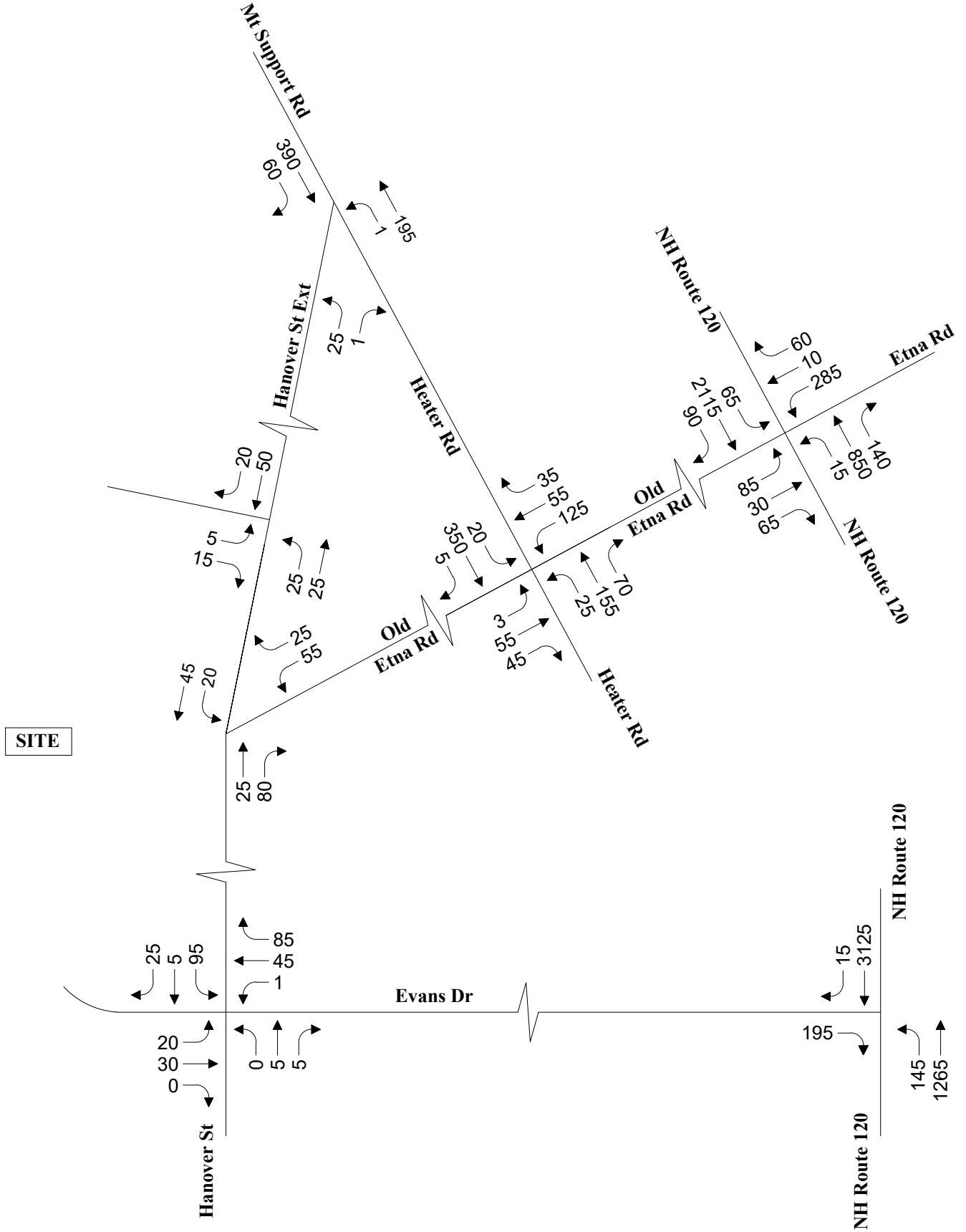


Not to Scale



2035 Build Weekday Morning Peak Hour Traffic Volumes

Figure 17

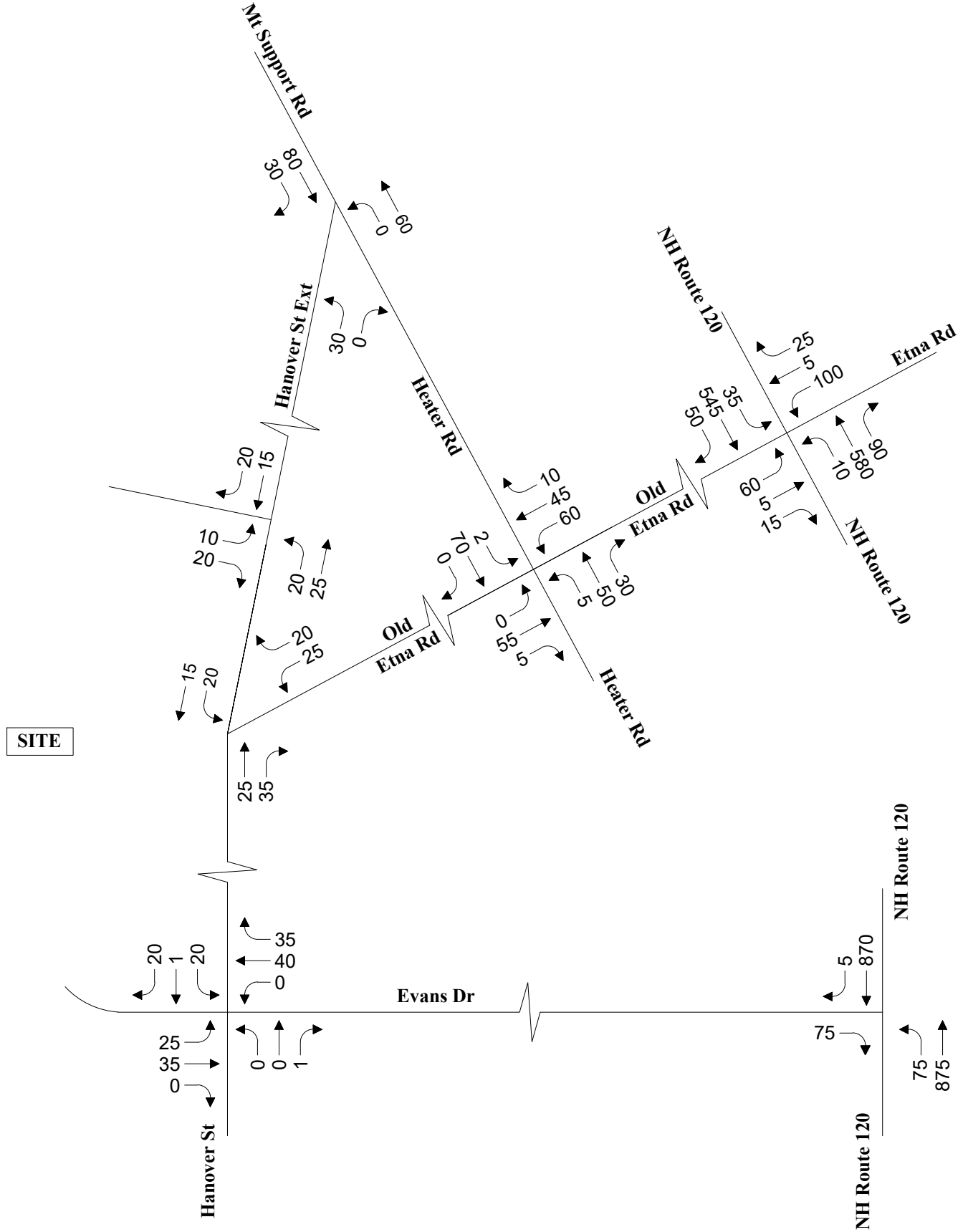


Not to Scale



2035 Build Weekday Evening
Peak Hour Traffic Volumes

Figure 18



Not to Scale



2035 Build Saturday Midday
Peak Hour Traffic Volumes

Figure 19

Capacity and Queue Analyses

Capacity and queue analyses were performed for the study area intersections to examine operations under future traffic volume conditions without the development (2025 and 2035 No-Build) and with the development (2025 and 2035 Build) during the weekday AM, weekday PM, and Saturday midday peak hours. A summary of the 2025 traffic volume operations is reflected in Table 7 and the 2035 analyses are summarized in Table 8. The capacity analysis worksheets are provided in the Appendix.

The peak hour factor (PHF) is a measure of traffic demand fluctuations within the peak hour. As traffic volumes and patterns change within the design horizons, the concentration of traffic volumes is not anticipated to remain stagnant. In conformance with NHDOT Bureau of Traffic's guidelines for intersection analyses, existing PHFs were increased to 0.90 for the 2035 No-Build and Build traffic volume conditions.²⁷ For those approaches where existing PHFs were observed to be above 0.90, the PHFs were used as observed without a reduction.

The 2035 future traffic volume operations include the NHDOT corridor project (Lebanon 29612) along NH Route 120 corridor between Hanover Street and Old Etna Road/Etna Road. Of importance to note, the intersection operations may reflect longer delays and queues within this Traffic Impact Study as compared to other evaluations conducted as part of that roadway project or other planning studies in the area due to different parameters required in developing traffic volumes. For example, transportation studies supporting public roadway improvement projects typically use average-month factors, may not apply pre-pandemic adjustment factors, and use calculated historical growth percentages. In comparison, land development traffic impact studies for private development in New Hampshire are required to analyze peak-month conditions, apply factors to account for the pandemic, and use no less than a 1 percent compounded annual growth rate in developing future traffic volumes which can result in higher traffic volumes and produce worse intersection operating results.

²⁷ Ibid. 8.

Table 7 Capacity Analysis Summary 2025 Opening Year Conditions

Intersection/Peak Hour/ Critical Movement or Lane Group	2025 No-Build					2025 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Hanover Street and Evans Drive										
<i>Weekday AM</i>										
South Site Driveway EB Approach	--	--	--	--	--	>1.20	>100	F	--	390
Evans Dr WB Approach	0.98	44.8	E	--	425	1.09	80.4	F	--	612
Hanover St NB Left ^a	--	--	--	--	--	--	--	--	--	--
Hanover St SB Left	0.20	7.8	A	--	18	0.20	7.8	A	--	18
<i>Weekday PM</i>										
South Site Driveway EB Approach	--	--	--	--	--	0.11	12.9	B	--	10
Evans Dr WB Approach	0.09	8.8	A	--	8	0.19	10.7	B	--	18
Hanover St NB Left ^a	--	--	--	--	--	--	--	--	--	--
Hanover St SB Left	0.08	7.4	A	--	8	0.08	7.4	A	--	8
<i>Saturday Midday</i>										
South Site Driveway EB Approach	--	--	--	--	--	0.09	10.2	B	--	8
Evans Dr WB Approach	0.04	8.5	A	--	2	0.12	9.6	A	--	10
Hanover St NB Left ^a	--	--	--	--	--	--	--	--	--	--
Hanover St SB Left	0.02	7.2	A	--	2	0.02	7.2	A	--	2

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

^a No vehicles were counted or projected on this movement.

Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2025 No-Build					2025 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Hanover Street and Old Etna Road										
<i>Weekday AM</i>										
Old Etna Rd WB Approach	0.31	11.9	B	--	32	0.42	14.9	B	--	52
Hanover St SB Left	0.00	7.9	A	--	0	0.04	8.1	A	--	2
<i>Weekday PM</i>										
Old Etna Rd WB Approach	0.05	9.4	A	--	2	0.12	10.0	B	--	5
Hanover St SB Left	0.00	7.5	A	--	0	0.02	7.6	A	--	2
<i>Saturday MIDDAY</i>										
Old Etna Rd WB Approach	0.01	8.8	A	--	0	0.08	9.3	A	--	8
Hanover St SB Left	0.00	0.0	A	--	0	0.02	7.4	A	--	2
Hanover Street and North Site Driveway										
<i>Weekday AM</i>										
North Site Driveway EB Approach	--	--	--	--	--	0.05	9.0	A	--	5
Hanover St NB Left	--	--	--	--	--	0.01	7.3	A	--	0
<i>Weekday PM</i>										
North Site Driveway EB Approach	--	--	--	--	--	0.02	8.9	A	--	2
Hanover St NB Left	--	--	--	--	--	0.02	7.4	A	--	2
<i>Saturday MIDDAY</i>										
North Site Driveway EB Approach	--	--	--	--	--	0.03	8.8	A	--	2
Hanover St NB Left	--	--	--	--	--	0.01	7.3	A	--	0

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2025 No-Build					2025 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Hanover Street Extension, Heater Road, and Mount Support Road										
<i>Weekday AM</i>										
Hanover St Extension EB Approach	0.15	13.5	B	--	12	0.22	14.4	A	--	20
Heater Rd NB Left	0.00	7.9	A	--	0	0.00	8.0	A	--	0
<i>Weekday PM</i>										
Hanover St Extension EB Approach	0.05	14.7	B	--	5	0.12	15.9	C	--	10
Heater Rd NB Left	0.00	8.7	A	--	0	0.00	8.8	A	--	0
<i>Saturday Midday</i>										
Hanover St Extension EB Approach	0.02	9.6	A	--	2	0.05	9.8	A	--	5
Heater Rd NB Left ^a	--	--	--	--	--	--	--	--	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

^a No vehicles were counted or projected on this movement.

Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2025 No-Build					2025 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Old Etna Road and Heater Road										
<i>Weekday AM</i>										
Old Etna Rd EB Approach	0.46	14.8	B	--	60	0.66	22.4	C	--	120
Old Etna Rd WB Approach	0.41	14.3	B	--	48	0.48	17.1	C	--	62
Heater Rd NB Approach	0.67	21.2	C	--	128	0.75	27.7	D	--	160
Heater Rd SB Approach	0.55	17.1	C	--	82	0.61	20.9	C	--	100
<i>Weekday PM</i>										
Old Etna Rd EB Approach	0.24	11.3	B	--	22	0.40	14.3	B	--	45
Old Etna Rd WB Approach	0.33	12.8	B	--	35	0.45	15.8	C	--	58
Heater Rd NB Approach	0.52	14.8	B	--	75	0.58	18.0	C	--	92
Heater Rd SB Approach	0.76	23.8	C	--	172	0.85	34.7	D	--	228
<i>Saturday Midday</i>										
Old Etna Rd EB Approach	0.03	7.3	A	--	2	0.11	8.0	A	--	10
Old Etna Rd WB Approach	0.11	8.0	A	--	10	0.18	8.5	A	--	15
Heater Rd NB Approach	0.12	7.6	A	--	10	0.13	8.0	A	--	12
Heater Rd SB Approach	0.10	7.7	A	--	8	0.10	8.1	A	--	8

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2025 No-Build					2025 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120, Old Etna Road, and Etna Road										
<i>Weekday AM</i>										
Old Etna Rd EB Left	0.90	>100	F	95	169	>1.20	>100	F	218	309
Old Etna Rd EB Through/Right	0.98	>100	F	98	186	0.81	91.0	F	96	164
Etna Rd WB Left	0.86	>100	F	106	224	0.95	>100	F	107	235
Etna Rd WB Left/Through/Right	0.90	>100	F	112	247	0.99	>100	F	113	259
Etna Rd WB Right	0.05	47.7	D	0	43	0.05	48.5	D	0	43
NH Route 120 NB Left	0.62	74.6	E	47	88	0.62	74.6	E	47	88
NH Route 120 NB Through	1.19	>100	F	1,536	1,536	1.20	>100	F	1,549	1,549
NH Route 120 NB Right	0.23	7.2	A	5	15	0.24	7.9	A	8	19
NB Route 120 SB Left	0.59	70.0	E	52	97	0.59	70.0	E	52	97
NH Route 120 SB Through/Right	0.39	12.7	B	193	224	0.40	13.4	B	203	234
Overall Intersection	1.10	85.7	F	--	--	1.15	95.1	F	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2025 No-Build					2025 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120, Old Etna Road, and Etna Road										
<i>Weekday PM</i>										
Old Etna Rd EB Left	0.49	64.7	E	48	84	0.64	69.4	E	81	127
Old Etna Rd EB Through/Right	0.36	63.7	E	29	76	0.29	61.3	E	29	75
Etna Rd WB Left	0.76	71.9	E	149	215	0.77	73.1	E	149	217
Etna Rd WB Left/Through/Right	0.78	75.7	E	156	225	0.80	77.6	E	156	227
Etna Rd WB Right	0.04	41.6	D	0	24	0.04	41.7	D	0	25
NH Route 120 NB Left	0.46	71.3	E	14	40	0.46	71.3	E	14	40
NH Route 120 NB Through	0.40	16.9	B	211	310	0.41	18.1	B	222	310
NH Route 120 NB Right	0.08	6.5	A	0	10	0.08	7.3	A	0	11
NB Route 120 SB Left	0.55	67.0	E	56	105	0.55	67.0	E	56	105
NH Route 120 SB Through/Right	0.92	31.1	C	665	1,237	0.97	39.8	D	761	1,292
Overall Intersection	0.87	33.2	C	--	--	0.92	38.8	D	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2025 No-Build					2025 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120, Old Etna Road, and Etna Road										
<i>Saturday Midday</i>										
Old Etna Rd EB Left	0.30	66.5	E	18	38	0.64	72.8	E	66	95
Old Etna Rd EB Through/Right	0.13	65.4	E	6	29	0.08	61.7	E	6	28
Etna Rd WB Left	0.53	65.1	E	54	101	0.53	65.1	E	54	101
Etna Rd WB Left/Through/Right	0.54	65.7	E	56	104	0.54	65.7	E	56	104
Etna Rd WB Right	0.02	50.2	D	0	0	0.02	50.2	D	0	0
NH Route 120 NB Left	0.33	70.0	E	10	32	0.33	70.0	E	10	32
NH Route 120 NB Through	0.24	8.8	A	102	160	0.25	10.3	B	113	180
NH Route 120 NB Right	0.06	4.7	A	0	7	0.06	5.7	A	0	10
NB Route 120 SB Left	0.41	66.6	E	28	62	0.41	66.6	E	28	62
NH Route 120 SB Through/Right	0.21	7.4	A	62	135	0.24	8.9	A	76	165
Overall Intersection	0.28	17.0	B	--	--	0.31	19.8	B	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2025 No-Build					2025 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120 and Evans Drive										
<i>Weekday AM</i>										
NH Route 120 NB Left	1.12	>100	F	--	462	1.15	>100	F	--	500
Evans Dr EB Left ^a	--	--	--	--	--	--	--	--	--	--
Evans Dr EB Right	0.80	42.8	E	--	178	1.04	88.4	F	--	330
<i>Weekday PM</i>										
NH Route 120 NB Left	0.87	>100	F	--	125	>1.20	>100	F	--	235
Evans Dr EB Left	>1.20	>100	F	--	332	>1.20	>100	F	--	435
Evans Dr EB Right	>1.20	>100	F	--	332	>1.20	>100	F	--	435
<i>Saturday Midday</i>										
NH Route 120 NB Left	0.04	9.6	A	--	2	0.09	9.9	A	--	8
Evans Dr EB Left	0.04	30.4	D	--	2	0.05	35.0	E	--	2
Evans Dr EB Right	0.07	11.5	B	--	5	0.14	12.0	B	--	12

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

^a No vehicles were counted or projected on this movement.

Table 8 Capacity Analysis Summary 2035 Design Year Conditions

Intersection/Peak Hour/ Critical Movement or Lane Group	2035 No-Build					2035 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Hanover Street and Evans Drive ^a										
<i>Weekday AM</i>										
South Site Driveway EB Approach	--	--	--	--	--	0.73	72.9	F	--	112
Evans Dr WB Approach	0.63	15.3	C	--	118	0.69	17.6	C	--	145
Hanover St NB Left ^a	--	--	--	--	--	--	--	--	--	--
Hanover St SB Left	0.15	7.7	A	--	12	0.15	7.7	A	--	12
<i>Weekday PM</i>										
South Site Driveway EB Approach	--	--	--	--	--	0.10	12.0	B	--	8
Evans Dr WB Approach	0.09	8.7	A	--	8	0.17	10.2	B	--	15
Hanover St NB Left ^a	--	--	--	--	--	--	--	--	--	--
Hanover St SB Left	0.06	7.4	A	--	5	0.06	7.4	A	--	5
<i>Saturday Midday</i>										
South Site Driveway EB Approach	--	--	--	--	--	0.08	9.9	A	--	8
Evans Dr WB Approach	0.04	8.5	A	--	2	0.09	9.3	A	--	8
Hanover St NB Left ^a	--	--	--	--	--	--	--	--	--	--
Hanover St SB Left	0.01	7.2	A	--	0	0.01	7.2	A	--	0

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

^a No vehicles were counted or projected on this movement.

Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2035 No-Build					2035 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Hanover Street and Old Etna Road										
<i>Weekday AM</i>										
Old Etna Rd WB Approach	0.19	10.8	B	--	18	0.26	12.5	B	--	25
Hanover St SB Left	0.00	7.8	A	--	0	0.03	8.1	A	--	2
<i>Weekday PM</i>										
Old Etna Rd WB Approach	0.04	9.2	A	--	2	0.10	9.6	A	--	8
Hanover St SB Left	0.00	7.4	A	--	0	0.02	7.5	A	--	0
<i>Saturday MIDDAY</i>										
Old Etna Rd WB Approach	0.01	8.7	A	--	0	0.05	9.1	A	--	5
Hanover St SB Left	0.00	0.0	A	--	0	0.01	7.4	A	--	0
Hanover Street and North Site Driveway										
<i>Weekday AM</i>										
North Site Driveway EB Approach	--	--	--	--	--	0.05	9.0	A	--	5
Hanover St NB Left	--	--	--	--	--	0.01	7.3	A	--	0
<i>Weekday PM</i>										
North Site Driveway EB Approach	--	--	--	--	--	0.02	8.9	A	--	2
Hanover St NB Left	--	--	--	--	--	0.02	7.4	A	--	2
<i>Saturday MIDDAY</i>										
North Site Driveway EB Approach	--	--	--	--	--	0.03	8.8	A	--	2
Hanover St NB Left	--	--	--	--	--	0.01	7.3	A	--	0

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2035 No-Build					2035 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Hanover Street Extension, Heater Road, and Mount Support Road										
<i>Weekday AM</i>										
Hanover St Extension EB Approach	0.14	12.9	B	--	12	0.21	13.6	B	--	20
Heater Rd NB Left	0.00	7.8	A	--	0	0.00	7.8	A	--	0
<i>Weekday PM</i>										
Hanover St Extension EB Approach	0.03	13.4	B	--	2	0.07	14.0	B	--	5
Heater Rd NB Left	0.00	8.4	A	--	0	0.00	8.5	A	--	0
<i>Saturday Midday</i>										
Hanover St Extension EB Approach	0.01	9.4	A	--	0	0.04	9.6	A	--	2
Heater Rd NB Left	0.00	0.0	A	--	0	0.00	0.0	A	--	0

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2035 No-Build					2035 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Old Etna Road and Heater Road										
<i>Weekday AM</i>										
Old Etna Rd EB Approach	0.32	11.7	B	--	35	0.45	13.9	B	--	58
Old Etna Rd WB Approach	0.36	12.5	B	--	40	0.41	13.6	B	--	50
Heater Rd NB Approach	0.61	17.1	C	--	105	0.60	17.6	C	--	100
Heater Rd SB Approach	0.37	11.7	B	--	42	0.40	13.5	B	--	48
<i>Weekday PM</i>										
Old Etna Rd EB Approach	0.13	9.6	A	--	10	0.19	10.6	B	--	18
Old Etna Rd WB Approach	0.29	11.4	B	--	30	0.38	12.9	B	--	45
Heater Rd NB Approach	0.40	11.7	B	--	48	0.43	12.8	B	--	52
Heater Rd SB Approach	0.60	15.5	C	--	100	0.63	17.5	C	--	112
<i>Saturday Midday</i>										
Old Etna Rd EB Approach	0.03	7.3	A	--	2	0.08	7.8	A	--	8
Old Etna Rd WB Approach	0.10	7.8	A	--	8	0.16	8.3	A	--	15
Heater Rd NB Approach	0.10	7.4	A	--	8	0.11	7.8	A	--	10
Heater Rd SB Approach	0.09	7.7	A	--	8	0.10	8.0	A	--	8

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2035 No-Build					2035 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120, Old Etna Road, and Etna Road										
<i>Weekday AM</i>										
Old Etna Rd EB Left	0.87	>100	F	92	203	>1.20	>100	F	194	347
Old Etna Rd EB Through	0.24	62.5	E	25	50	0.22	61.5	E	25	49
Old Etna Rd EB Right	0.05	54.2	D	0	40	0.05	53.4	D	0	40
Etna Rd WB Left	0.86	89.9	F	96	168	0.86	89.9	F	96	168
Etna Rd WB Through	0.29	62.1	E	33	71	0.29	62.1	E	33	71
Etna Rd WB Right	0.08	48.8	D	7	54	0.08	48.8	D	7	54
NH Route 120 NB Left	0.54	67.2	E	50	97	0.54	67.2	E	50	97
NH Route 120 NB Through	>1.20	>100	F	1,661	1,778	>1.20	>100	F	1,674	1,791
NH Route 120 NB Right	0.25	7.4	A	7	21	0.26	7.7	A	9	23
NB Route 120 SB Left	0.60	71.3	E	55	105	0.60	71.3	E	55	105
NH Route 120 SB Through/Right	0.41	13.2	B	203	253	0.43	13.9	B	213	266
Overall Intersection	1.13	94.0	F	--	--	1.18	>100	F	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2035 No-Build					2035 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120, Old Etna Road, and Etna Road										
<i>Weekday PM</i>										
Old Etna Rd EB Left	0.57	68.5	E	55	104	0.78	88.4	F	85	177
Old Etna Rd EB Through	0.15	62.5	E	15	33	0.14	61.5	E	15	33
Old Etna Rd EB Right	0.06	57.6	E	1	39	0.06	56.6	E	1	39
Etna Rd WB Left	0.90	85.3	F	150	254	0.97	>100	F	152	254
Etna Rd WB Through	0.06	56.5	E	9	30	0.06	57.5	E	9	30
Etna Rd WB Right	0.04	43.9	D	0	39	0.04	44.8	D	0	39
NH Route 120 NB Left	0.25	66.5	E	14	40	0.25	66.5	E	14	40
NH Route 120 NB Through	0.42	15.6	B	223	278	0.42	15.6	B	223	278
NH Route 120 NB Right	0.09	6.6	A	0	10	0.09	6.9	A	0	10
NB Route 120 SB Left	0.59	68.6	E	60	112	0.59	68.6	E	60	112
NH Route 120 SB Through/Right	0.99	43.4	D	1,017	1,267	1.02	49.8	D	1,158	1,316
Overall Intersection	0.95	40.4	D	--	--	0.99	46.2	D	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2035 No-Build					2035 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120, Old Etna Road, and Etna Road										
<i>Saturday Midday</i>										
Old Etna Rd EB Left	0.40	68.2	E	20	49	0.61	71.1	E	60	109
Old Etna Rd EB Through	0.05	65.9	E	2	10	0.03	61.8	E	2	10
Old Etna Rd EB Right	0.01	62.2	E	0	0	0.01	58.3	E	0	0
Etna Rd WB Left	0.52	64.2	E	51	82	0.52	64.2	E	51	82
Etna Rd WB Through	0.05	61.5	E	5	20	0.05	61.5	E	5	20
Etna Rd WB Right	0.02	50.3	D	0	0	0.02	50.3	D	0	0
NH Route 120 NB Left	0.23	67.7	E	10	32	0.23	67.7	E	10	32
NH Route 120 NB Through	0.26	8.6	A	115	174	0.27	10.3	B	126	193
NH Route 120 NB Right	0.06	4.5	A	0	8	0.06	5.7	A	0	9
NB Route 120 SB Left	0.44	66.5	E	32	69	0.44	66.5	E	32	69
NH Route 120 SB Through/Right	0.23	7.4	A	96	144	0.26	9.2	A	113	173
Overall Intersection	0.30	16.2	B	--	--	0.32	18.9	B	--	--

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)

Intersection/Peak Hour/ Critical Movement or Lane Group	2035 No-Build					2035 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
NH Route 120 and Evans Drive										
<i>Weekday AM</i>										
NH Route 120 NB Left	> 1.20	> 100	F	--	1,308	> 1.20	> 100	F	--	1,375
Evans Dr EB Right	0.93	73.8	F	--	225	1.15	> 100	F	--	365
<i>Weekday PM</i>										
NH Route 120 NB Left	> 1.20	> 100	F	--	320	> 1.20	> 100	F	--	462
Evans Dr EB Right	> 1.20	> 100	F	--	445	> 1.20	> 100	F	--	545
<i>Saturday Midday</i>										
NH Route 120 NB Left	0.08	13.9	B	--	8	0.10	10.3	B	--	8
Evans Dr EB Right	0.08	13.2	B	--	8	0.15	12.5	B	--	12

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

Hanover Street, Evans Drive, and South Site Driveway

As previously described, long delays are currently experienced along the Evans Drive westbound approach at the unsignalized intersection with Hanover Street during the weekday AM peak hour. These delays are common near schools during the student arrival time period. Delays may be shown to improve with the 2035 traffic volumes as compared with the 2025 traffic volumes due to the PHF modifications in compliance with NHDOT guidelines. Under Build traffic-volume conditions, the south site driveway will be constructed as the fourth (west) leg to the unsignalized intersection. As part of the proposed development, measures have been evaluated to improve intersection operations (discussed below).

Hanover Street and Old Etna Road

Based on the 2025 and 2035 No-Build and Build traffic volume conditions, the minor street approaches at the Hanover Street and Old Etna Road unsignalized intersection are projected to operate at LOS B or better during the weekday AM, weekday PM, and Saturday midday peak hours. With the addition of the estimated site trips, capacity is shown to be available as the v/c ratios are well below 1.00.

Hanover Street Extension and North Site Driveway

The critical movements at the proposed north site driveway unsignalized intersection with Hanover Street Extension are projected to operate at LOS A during the weekday AM, weekday PM, and Saturday midday peak hours.

Hanover Street Extension, Heater Road, and Mount Support Road

Under 2025 and 2035 No-Build and Build traffic volume conditions, the Hanover Street Extension approach and the Heater Road northbound left turns at the unsignalized intersection with Mount Support Road are estimated to operate at LOS C or better during the weekday AM, weekday PM, and Saturday midday peak hours. With the addition of site trips added to the roadway network, delay increases are projected to be negligible (<1 second) during the peak hours.

Old Etna Road and Heater Road

Delays at the Heater Road and Old Etna Road All-Way Stop-Control (AWSC) intersection may be shown to improve with the 2035 traffic volumes as compared with the 2025 traffic volumes due to the PHF modifications in compliance with NHDOT guidelines. Based on the 2035 No-Build and Build traffic volume conditions, the minor street approaches to the unsignalized intersection are projected to operate at LOS D or better during the weekday AM, weekday PM, and Saturday midday peak hours. With the addition of the site trips through this intersection during the 2035 traffic volume conditions, increases in delays are anticipated to minimal (≤ 2.2 seconds) and capacity is shown to be available as the v/c ratios are below 1.00.

NH Route 120, Old Etna Road, and Etna Road

As previously described, the NH Route 120 signalized intersection with Old Etna Road and Etna Road is contained within a traffic signal system with the I-89 southbound ramps, I-89

northbound ramps, and Heater Road. Based on existing intersection operations, there are long delays experienced at the NH Route 120, Old Etna Road, Etna Road signalized intersection independent of future traffic growth associated with historical growth, background developments, and the proposed residential development. Since capacity constraints are shown with the 2022 Existing traffic volumes during the weekday AM peak hour, improvements deemed necessary at this location are separate from the proposed residential development. NHDOT officials are developing improvements along the NH Route 120 corridor (Lebanon 29612) between Hanover Street and Old Etna Road/Etna Road.

NH Route 120 and Evans Drive

Under 2022 Existing traffic-volume conditions, long delays (LOS F) are experienced on the NH Route 120 northbound left-turn lane at the unsignalized intersection with Evans Drive during the weekday AM and PM peak hours. Long delays are also experienced on the Evans Drive minor street movements during the weekday PM peak hour due to the heavy demand of conflicting NH Route 120 traffic. Similar to the NH Route 120, Old Etna Road, and Etna Road intersection, improvements required at this location are being considered as part of the NHDOT corridor improvement project along NH Route 120 independent of the proposed residential development.

Improvements

The final component of a traffic study is the identification of improvement measures that are expected to be effective in eliminating or improving anticipated deficiencies resulting from the combination of existing, background, and project-generated traffic. As discussed at the December 1, 2023 meeting with local, state, and regional representatives, City officials have considered installing AWSC at the Hanover Street and Evans Drive intersection. To determine if the Hanover Street, Evans Drive, and south site driveway should be placed under AWSC, a review was conducted of the Manual on Uniform Traffic Control Devices (MUTCD)²⁸ criteria. The AWSC criteria discussion included within this section is based on the 2009 edition of the MUTCD because the newest edition (11th Edition) was recently published in December 2023 and has not yet been accepted by NHDOT officials. The following summarizes the findings of the criteria being satisfied for MUTCD Section 2B.17 (AWSC Warrant E):

› The need to control left-turn conflicts.²⁹

- As shown on Figures 17 through 19 for the 2035 Build weekday AM, weekday PM, and Saturday midday peak hour traffic volumes:
 - There are projected to be between 20 and 45 vehicles turning left from the proposed site driveway onto Hanover Street northbound that would be in conflict with between 41 and 223 vehicles on the Hanover Street southbound approach and between 75 and 555 vehicles on the Evans Drive westbound approach.
 - There are projected to be between 20 and 210 vehicles turning left from Hanover Street southbound onto Evans Drive that would be in conflict with between 75 and

²⁸ Federal Highway Administration. Manual on Uniform Traffic Control Devices for Streets and Highways, 11th ed. Dec. 2023.

²⁹ MUTCD, Section 2B.17, Paragraph 1, Item A.

555 vehicles on the Evans Drive westbound approach and between 50 and 105 vehicles on the south site driveway eastbound approach.

- As reflected in Table 8, the site driveway approach to Hanover Street and Evans Drive is shown to operate with long delays (LOS F) with the 2035 No-Build weekday AM peak hour traffic volumes.
 - Therefore, the criterion of needing to control the left-turn conflicts would be met.
- › **An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where AWSC would improve traffic operational characteristics of the intersection.**³⁰
- Hanover Street and Evans Drive are local roadways providing single lanes of vehicle travel in each direction and a sidewalk provided along one side of each roadway (i.e., along the east side of Hanover Street and along the north side of Evans Drive).
 - Based on 2035 Build conditions during the weekday AM, weekday PM, and Saturday midday peak hours (Figures 17 through 19), the Hanover Street southbound approach is projected to carry between 41 and 223 vehicles and the Evans Drive westbound approach estimated to carry between 75 and 555 vehicles.
 - The Hanover Street and Evans Drive intersection is in close proximity to Hanover Street Elementary School and Lebanon High School that generate motorized and non-motorized travel.
 - With the placement of the intersection under AWSC (as shown in Table 9), the intersection would be projected to operate with all approaches at LOS C or better.
 - Therefore, the criterion of two residential neighborhood collector (through) streets of similar design and operating characteristics where AWSC would improve traffic operations would be met.
- › **Where pedestrian and/or bicyclist movement support the installation of AWSC.**³¹
- The Hanover Street and Evans Drive intersection is in close proximity to Hanover Street Elementary School and Lebanon High School that generate motorized and non-motorized travel.
 - As reflected in the November 2022 traffic counts, the intersection captured:
 - 14 cyclists and 53 pedestrians crossing the intersection on a weekday between 7:00 and 8:00 AM.
 - 11 cyclists and 77 pedestrians crossing the intersection on a weekday between 2:00 and 3:00 PM.
 - 7 cyclists and 52 pedestrians crossing the intersection on a weekday between 3:00 and 4:00 PM.
 - 2 cyclists and 12 pedestrians crossing the intersection on a weekday between 4:00 and 5:00 PM.
 - Therefore, the non-motorized transportation movements may support the AWSC criterion.

³⁰ MUTCD, Section 2B.07, Paragraph 1, Item B.

³¹ MUTCD, Section 2B.17, Paragraph 1, Item C.

Intersection analyses have been conducted with the Hanover Street, Evans Drive, and south site driveway intersection placed under AWSC. A summary of the 2035 traffic-volume operations with these improvements in place are reflected in Table 9. The capacity analysis worksheets are provided in the Appendix.

Table 9 Capacity Analysis Summary: 2035 Build with Improvements

Intersection/ Peak Hour/Critical Movement	v/c	Delay	LOS	50 th % Queue	95 th % Queue
Hanover Street and Evans Drive					
<i>Weekday AM</i>					
Site Driveway EB Approach	0.18	9.7	A	--	15
Evans Dr WB Approach	0.72	17.5	C	--	160
Hanover St NB Approach	0.00	8.5	A		0
Hanover St SB Approach	0.40	12.6	B	--	48
<i>Weekday PM</i>					
Site Driveway EB Approach	0.07	7.9	A	--	5
Evans Dr WB Approach	0.16	7.7	A	--	15
Hanover St NB Approach	0.01	7.3	A		0
Hanover St SB Approach	0.17	8.3	A	--	15
<i>Saturday Midday</i>					
Site Driveway EB Approach	0.08	7.5	A	--	5
Evans Dr WB Approach	0.09	7.1	A	--	8
Hanover St NB Approach	0.00	6.7	A		0
Hanover St SB Approach	0.05	7.2	A	--	5

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

As shown, these improvements would result in operations on the four approaches at LOS C or better with the 2035 Build traffic volumes for the weekday AM, weekday PM, and Saturday midday peak hours. Accordingly, the installation of AWSC at this location may be desirable.

As detailed within this traffic study, the traffic volumes evaluated may represent an overestimated scenario that may not be realized along the local roadway system (application of peak-month and pandemic adjustments from NH Route 120). Therefore, the intersection operations presented within this traffic study may show worse conditions than will be realized. As such, the applicant of the proposed Lebanon Brickyard development is committed to installing the AWSC at this location should City of Lebanon officials deem this type of traffic control appropriate.

Summary of Findings

Existing and future conditions in the study area have been described, analyzed, and evaluated with respect to traffic operations and the impact of the proposed Lebanon Brickyard residential development. Due to existing operational deficiencies along the NH Route 120 corridor, NHDOT

officials are developing improvements between Hanover Street (to the south) and Old Etna Road/Etna Road (to the north). The improvements are intended to improve operations, progression, and safety along the corridor that includes the I-89 interchange at Exit 18 (Lebanon 29612). Within the study area for the proposed Lebanon Brickyard residential development, improvements are being evaluated at the NH Route 120 intersections with Evans Drive and with Old Etna Road and Etna Road. These improvements may result in vehicles currently traveling along the Mount Support Road/Heater Road corridor changing their travel route onto the major highway system (NH Route 120 corridor).

Common traffic engineering practice suggests that a development may have a significant impact if the addition of site trips increases traffic volumes at an intersection by 100 vehicles per hour or more. Based on the findings of this traffic study, the addition of site traffic through the study area intersections meets this threshold only at the proposed Hanover Street southern site driveway. Therefore, standard traffic engineering practice suggests that the proposed development would not be expected to result in noticeable impacts to the area roadway system beyond the southern site driveway. To offset the impacts of the proposed residential development, AWSC may be placed at the Hanover Street, Evans Drive, and south site driveway intersection. As described within this traffic study, the seasonal and pandemic adjustments used in developing the traffic volumes may result in worse intersection operations than will be realized along the local roadway system. Therefore, the applicant is committed to installing the AWSC at this location should City of Lebanon officials deem this type of traffic control appropriate. As an interim condition, City officials may consider having the applicant install the AWSC as a temporary condition to understand the intersection operations prior to implementing a formal change to the traffic control.

Appendix

Traffic Count and Vehicle Speed Data
Traffic-Volume Adjustment Data
Advance Transit Bus Service Data
Existing Intersection Analysis Worksheets
Background Developments
Trip-Generation and Distribution Calculations
No-Build and Build Intersection Analysis Worksheets
2034 Build Analysis Worksheets with Improvements
School Dismissal Condition Data

Traffic Count and Vehicle Speed Data

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH
Direction: WB,

52933001

11/10/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	2	4	1	2	1	2	1	0	13
6:00	0	0	0	0	1	2	7	20	23	12	6	3	0	1	75
7:00	0	0	0	1	2	24	77	127	77	34	15	2	2	0	361
8:00	0	0	0	1	0	3	12	17	24	15	8	2	0	1	83
9:00	0	0	0	0	1	1	4	8	14	2	3	1	0	0	34
10:00	0	0	0	0	1	1	2	11	11	7	3	0	0	0	36
11:00	0	0	0	0	1	3	3	16	15	6	1	2	0	0	47
12:00 PM	0	0	0	0	1	4	9	12	8	9	3	2	0	0	48
1:00	0	0	0	0	0	3	13	14	20	6	3	2	1	0	62
2:00	0	0	0	0	0	2	8	24	38	7	5	2	0	1	87
3:00	0	0	0	0	0	2	8	12	8	14	2	0	0	0	46
4:00	0	0	0	0	3	1	5	16	15	5	4	0	1	1	51
5:00	0	0	1	0	0	0	2	14	9	8	3	1	3	0	41
6:00	0	0	0	0	0	1	4	4	6	4	7	0	0	0	26
7:00	0	0	0	0	0	2	3	5	4	2	1	0	1	0	18
8:00	0	0	0	1	0	2	0	4	4	0	1	0	0	0	12
9:00	0	0	0	0	0	0	0	0	2	3	0	1	0	0	6
10:00	0	0	0	0	0	0	1	3	1	2	0	0	0	0	7
11:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	1	3	10	51	160	314	283	139	66	20	9	4	1060

Percentile	15th
Speed	20
	24
Mean Speed (Average)	24.6
10 MPH Pace Speed	18-27
Number in Pace	800
Percent in Pace	75.5%
Number > 27 MPH	238
Percent > 27 MPH	22.5%

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH
Direction: WB,

52933001

11/11/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	1	1	1	0	0	0	0	0	3
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
4:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00	0	0	0	0	0	0	1	1	3	2	0	0	0	0	7
6:00	0	0	0	0	0	0	4	7	6	6	4	3	1	1	32
7:00	0	0	0	0	0	1	6	5	12	8	5	1	1	0	39
8:00	0	0	0	0	0	0	4	5	8	2	2	1	0	0	22
9:00	0	0	0	0	0	1	4	6	8	9	3	0	0	0	31
10:00	0	0	1	0	0	2	2	3	7	8	1	1	2	0	27
11:00	0	0	0	0	1	0	7	7	4	1	2	1	0	0	23
12:00 PM	0	0	0	0	0	0	7	4	8	5	6	1	1	0	32
1:00	0	0	0	0	1	2	4	7	10	2	0	1	2	0	29
2:00	0	0	0	0	0	0	5	5	3	4	1	0	1	0	19
3:00	0	0	0	0	0	1	1	4	4	4	1	1	1	0	17
4:00	0	0	0	0	0	0	1	3	7	4	1	1	0	1	18
5:00	0	0	0	1	0	1	1	3	3	5	3	0	0	0	17
6:00	0	0	0	0	0	0	2	5	2	7	0	2	0	0	18
7:00	0	0	0	0	1	1	2	1	4	1	1	1	0	0	12
8:00	0	0	0	0	0	0	0	4	3	2	2	0	0	0	11
9:00	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
10:00	0	0	0	0	0	0	0	1	3	0	2	0	0	0	6
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	3	9	52	72	98	73	34	14	9	2	368

Percentile	15th
Speed	20
	50th
	25
	85th
	31
	95th
	34
Mean Speed (Average)	26.2
10 MPH Pace Speed	20-29
Number in Pace	260
Percent in Pace	70.7%
Number > 27 MPH	132
Percent > 27 MPH	35.9%

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH
Direction: WB,

52933001

11/12/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:00	0	0	0	0	0	0	0	2	2	4	2	0	1	0	11
7:00	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4
8:00	0	0	0	0	0	0	2	3	5	3	2	2	1	0	18
9:00	0	0	0	0	0	2	4	7	11	5	1	1	0	1	32
10:00	0	0	0	0	0	0	1	7	7	2	3	1	1	0	22
11:00	0	0	0	0	0	1	5	5	5	4	2	2	0	0	24
12:00 PM	0	0	0	0	0	1	1	1	4	3	4	1	0	0	15
1:00	0	0	0	0	0	0	3	4	7	5	2	1	1	0	23
2:00	0	0	0	0	0	0	0	2	5	7	1	0	1	0	16
3:00	0	0	0	0	0	1	1	3	5	0	1	1	0	3	15
4:00	0	0	1	0	0	0	2	3	8	3	1	2	0	1	21
5:00	0	0	0	0	0	0	2	6	7	4	2	2	0	1	24
6:00	0	0	0	0	0	0	1	8	2	3	1	1	0	0	16
7:00	0	0	0	0	0	1	0	0	3	3	0	1	0	0	8
8:00	0	0	0	0	0	0	0	1	0	3	0	0	0	0	4
9:00	0	0	0	0	0	0	2	3	2	1	2	0	0	0	10
10:00	0	0	0	0	0	0	1	2	3	2	0	0	0	0	8
11:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	1	0	0	8	26	57	80	52	24	15	6	6	275
Percentile															
Speed				15th	50th	85th	95th								
				21	25	32	35								
Mean Speed (Average)				28.5											
10 MPH Pace Speed				20-29											
Number in Pace				197											
Percent in Pace				71.6%											
Number > 27 MPH				103											
Percent > 27 MPH				37.5%											
Grand Total	0	0	3	4	13	68	238	443	461	264	124	49	24	12	1703
Stats															
Percentile				15th	50th	85th	95th								
Speed				21	25	31	34								
Mean Speed (Average)				27.2											
10 MPH Pace Speed				20-29											
Number in Pace				1246											
Percent in Pace				73.2%											
Number > 27 MPH				1244											
Percent > 27 MPH				38.5%											

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH
Direction: EB,

52933001

11/10/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	1	0	3
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	1	1	0	1	0	0	0	3
3:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3
6:00	0	0	0	1	0	3	0	2	3	6	4	0	1	0	20
7:00	0	0	0	0	0	5	9	16	51	41	13	5	1	1	142
8:00	0	0	0	0	0	2	0	4	13	26	13	2	1	1	62
9:00	0	0	0	0	0	1	3	0	11	6	4	2	1	0	28
10:00	0	0	0	0	3	1	3	6	9	6	4	4	1	1	38
11:00	0	0	0	0	0	1	2	5	17	18	13	5	0	2	63
12:00 PM	0	0	0	0	0	0	1	5	23	11	5	3	1	1	50
1:00	0	0	0	0	0	0	1	10	11	19	11	3	2	0	57
2:00	0	0	0	0	0	1	5	24	43	35	21	9	2	2	142
3:00	0	0	0	0	0	1	8	28	34	23	17	3	3	2	119
4:00	0	0	0	0	2	0	7	16	22	16	7	4	2	1	77
5:00	0	0	0	0	0	1	2	11	27	21	6	3	1	1	73
6:00	0	0	0	0	0	2	1	4	5	3	5	1	1	1	23
7:00	0	0	0	0	0	0	0	1	3	3	2	2	0	0	11
8:00	0	0	0	0	1	0	1	7	10	4	4	1	0	0	28
9:00	0	0	0	0	0	0	1	1	2	0	0	1	0	0	5
10:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
11:00	0	0	0	0	0	0	0	1	1	0	1	0	0	0	3
Total	0	0	0	1	6	18	45	143	288	242	132	48	18	13	954

Percentile	15th
Speed	22
	50th
	27
	85th
	31
	95th
	34
Mean Speed (Average)	28.5
10 MPH Pace Speed	21-30
Number in Pace	714
Percent in Pace	74.8%
Number > 27 MPH	453
Percent > 27 MPH	47.5%

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH
Direction: EB,

52933001

11/11/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3
3:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	1	0	1	1	1	0	0	0	4
6:00	0	0	0	0	0	1	0	0	0	2	1	0	0	0	4
7:00	0	0	0	0	0	0	0	3	5	2	2	1	1	0	14
8:00	0	0	0	0	0	0	0	1	2	5	1	1	1	0	11
9:00	0	0	0	0	0	0	1	1	7	8	6	1	1	0	25
10:00	0	0	0	0	0	0	3	5	9	8	5	1	0	2	33
11:00	0	0	0	0	0	1	2	4	5	8	4	3	1	2	30
12:00 PM	0	0	0	0	0	0	1	4	12	6	10	0	0	1	34
1:00	0	0	0	0	0	1	1	5	5	6	5	3	1	0	27
2:00	0	0	0	0	1	1	1	3	6	14	4	2	1	0	33
3:00	0	0	0	0	1	0	0	3	9	11	4	2	3	0	33
4:00	0	0	0	0	0	0	0	9	8	9	7	3	3	1	40
5:00	0	0	0	0	0	0	0	4	9	10	4	0	0	0	27
6:00	0	0	0	0	0	0	1	2	5	2	6	1	0	0	17
7:00	0	0	0	0	0	0	0	2	3	0	1	1	1	0	8
8:00	0	0	0	0	0	0	1	0	3	1	0	1	0	0	6
9:00	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2
10:00	0	0	0	0	0	0	0	1	2	1	0	0	0	0	4
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	3	6	12	49	93	94	62	21	13	6	359

Percentile	15th	50th	85th	95th
Speed	24	27	32	36
Mean Speed (Average)	29.5			
10 MPH Pace Speed	23-32			
Number in Pace	265			
Percent in Pace	73.8%			
Number > 27 MPH	196			
Percent > 27 MPH	54.6%			

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH
Direction: EB,

52933001

11/12/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
1:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
2:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
4:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
7:00	0	0	0	0	0	0	0	1	2	3	1	0	0	0	7
8:00	0	0	0	0	0	0	1	2	3	1	0	2	1	0	10
9:00	0	0	0	0	0	0	0	3	6	4	7	3	1	0	24
10:00	0	0	0	0	0	0	0	1	7	3	7	0	4	1	23
11:00	0	0	0	0	0	1	2	3	6	3	3	0	0	0	18
12:00 PM	0	0	0	0	0	0	0	1	3	5	1	0	0	1	11
1:00	0	0	0	0	0	0	1	3	5	9	2	3	0	0	23
2:00	0	0	0	0	0	0	0	0	1	3	2	0	2	1	9
3:00	0	0	0	0	0	0	1	1	3	2	0	1	1	1	10
4:00	0	0	0	0	0	0	0	1	2	2	1	0	0	0	6
5:00	0	0	0	0	0	1	1	1	1	2	4	2	0	1	13
6:00	0	0	0	0	0	0	2	8	4	7	5	0	1	0	27
7:00	0	0	0	0	0	0	0	1	2	2	3	2	1	0	11
8:00	0	0	0	0	0	0	1	0	1	1	0	2	0	0	5
9:00	0	0	0	0	0	0	0	1	1	1	1	0	1	0	5
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	11	27	49	52	37	16	12	5	211

Percentile	15th
Speed	23
	28
Mean Speed (Average)	30.8
10 MPH Pace Speed	23-32
Number in Pace	147
Percent in Pace	69.7%
Number > 27 MPH	122
Percent > 27 MPH	57.8%

Grand Total	0	0	0	1	9	26	68	219	430	388	231	85	43	24	1524
Stats		Percentile	15th	50th	85th	95th									
		Speed	23	27	32	35									
	Mean Speed (Average)		29.0												
	10 MPH Pace Speed		23-32												
	Number in Pace		1122												
	Percent in Pace		73.6%												
	Number > 27 MPH		771												
	Percent > 27 MPH		50.6%												

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH
Direction: Combined

52933001

11/10/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	1	1	1	0	0	1	0	4
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	2	2	0	1	0	0	0	5
3:00	0	0	0	0	0	0	0	1	2	0	1	0	0	0	4
4:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	2	4	2	4	1	2	1	0	16
6:00	0	0	0	1	1	5	7	22	26	18	10	3	1	1	95
7:00	0	0	0	1	2	29	86	143	128	75	28	7	3	1	503
8:00	0	0	0	1	0	5	12	21	37	41	21	4	1	2	145
9:00	0	0	0	0	1	2	7	8	25	8	7	3	1	0	62
10:00	0	0	0	0	4	2	5	17	20	13	7	4	1	1	74
11:00	0	0	0	0	1	4	5	21	32	24	14	7	0	2	110
12:00 PM	0	0	0	0	1	4	10	17	31	20	8	5	1	1	98
1:00	0	0	0	0	0	3	14	24	31	25	14	5	3	0	119
2:00	0	0	0	0	0	3	13	48	81	42	26	11	2	3	229
3:00	0	0	0	0	0	3	16	40	42	37	19	3	3	2	165
4:00	0	0	0	0	5	1	12	32	37	21	11	4	3	2	128
5:00	0	0	1	0	0	1	4	25	36	29	9	4	4	1	114
6:00	0	0	0	0	0	3	5	8	11	7	12	1	1	1	49
7:00	0	0	0	0	0	2	3	6	7	5	3	2	1	0	29
8:00	0	0	0	1	1	2	1	11	14	4	5	1	0	0	40
9:00	0	0	0	0	0	0	1	1	4	3	0	2	0	0	11
10:00	0	0	0	0	0	0	1	4	1	3	0	0	0	0	9
11:00	0	0	0	0	0	0	0	1	1	1	1	0	0	0	4
Total	0	0	1	4	16	69	205	457	571	381	198	68	27	17	2014

Percentile	15th
Speed	21
	50th
	25
	85th
	30
	95th
	34
Mean Speed (Average)	26.5
10 MPH Pace Speed	21-30
Number in Pace	1475
Percent in Pace	73.2%
Number > 27 MPH	691
Percent > 27 MPH	34.3%

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH
Direction: Combined

52933001

11/11/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	1	1	1	1	1	0	0	0	0	0	5
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	3	0	1	0	0	0	4
3:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
4:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
5:00	0	0	0	0	0	0	2	1	4	3	1	0	0	0	11
6:00	0	0	0	0	0	1	4	7	6	8	5	3	1	1	36
7:00	0	0	0	0	0	1	6	8	17	10	7	2	2	0	53
8:00	0	0	0	0	0	0	4	6	10	7	3	2	1	0	33
9:00	0	0	0	0	0	1	5	7	15	17	9	1	1	0	56
10:00	0	0	1	0	0	2	5	8	16	16	6	2	2	2	60
11:00	0	0	0	0	1	1	9	11	9	9	6	4	1	2	53
12:00 PM	0	0	0	0	0	0	8	8	20	11	16	1	1	1	66
1:00	0	0	0	0	1	3	5	12	15	8	5	4	3	0	56
2:00	0	0	0	0	1	1	6	8	9	18	5	2	2	0	52
3:00	0	0	0	0	1	1	1	7	13	15	5	3	4	0	50
4:00	0	0	0	0	0	0	1	12	15	13	8	4	3	2	58
5:00	0	0	0	1	0	1	1	7	12	15	7	0	0	0	44
6:00	0	0	0	0	0	0	3	7	7	9	6	3	0	0	35
7:00	0	0	0	0	1	1	2	3	7	1	2	2	1	0	20
8:00	0	0	0	0	0	0	1	4	6	3	2	1	0	0	17
9:00	0	0	0	0	0	1	0	0	1	1	0	1	0	0	4
10:00	0	0	0	0	0	0	0	2	5	1	2	0	0	0	10
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	6	15	64	121	191	167	96	35	22	8	727

Percentile	15th
Speed	22
	26
Mean Speed (Average)	27.8
10 MPH Pace Speed	21-30
Number in Pace	510
Percent in Pace	70.2%
Number > 27 MPH	328
Percent > 27 MPH	45.1%

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH
Direction: Combined

52933001

11/12/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
1:00	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
2:00	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3
3:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
4:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:00	0	0	0	0	0	0	0	2	3	4	2	1	1	0	13
7:00	0	0	0	0	0	0	0	1	5	3	1	0	1	0	11
8:00	0	0	0	0	0	0	3	5	8	4	2	4	2	0	28
9:00	0	0	0	0	0	2	4	10	17	9	8	4	1	1	56
10:00	0	0	0	0	0	0	1	8	14	5	10	1	5	1	45
11:00	0	0	0	0	0	2	7	8	11	7	5	2	0	0	42
12:00 PM	0	0	0	0	0	1	1	2	7	8	5	1	0	1	26
1:00	0	0	0	0	0	0	4	7	12	14	4	4	1	0	46
2:00	0	0	0	0	0	0	0	2	6	10	3	0	3	1	25
3:00	0	0	0	0	0	1	2	4	8	2	1	2	1	4	25
4:00	0	0	1	0	0	0	2	4	10	5	2	2	0	1	27
5:00	0	0	0	0	0	1	3	7	8	6	6	4	0	2	37
6:00	0	0	0	0	0	0	3	16	6	10	6	1	1	0	43
7:00	0	0	0	0	0	1	0	1	5	5	3	3	1	0	19
8:00	0	0	0	0	0	0	1	1	1	4	0	2	0	0	9
9:00	0	0	0	0	0	0	2	4	3	2	3	0	1	0	15
10:00	0	0	0	0	0	0	1	2	3	2	0	0	0	0	8
11:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	1	0	0	10	37	84	129	104	61	31	18	11	486
Percentile															
Speed				15th	50th	85th	95th								
				22	27	32	37								
Mean Speed (Average)				29.5											
10 MPH Pace Speed				21-30											
Number in Pace				337											
Percent in Pace				69.3%											
Number > 27 MPH				225											
Percent > 27 MPH				46.3%											
Grand Total	0	0	3	5	22	94	306	662	891	652	355	134	67	36	3227
Stats															
Percentile				15th	50th	85th	95th								
Speed				21	25	31	34								
Mean Speed (Average)				27.2											
10 MPH Pace Speed				21-30											
Number in Pace				2322											
Percent in Pace				72.0%											
Number > 27 MPH				1244											
Percent > 27 MPH				38.5%											

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH

52933001

11/10/2022	WB,		Hour Totals		EB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	12			1	11				
12:15	0	17			2	21				
12:30	1	9			0	11				
12:45	0	10	1	48	0	7	3	50	4	98
1:00	0	12			0	12				
1:15	0	12			0	21				
1:30	0	12			0	14				
1:45	0	26	0	62	0	10	0	57	0	119
2:00	2	21			1	49				
2:15	0	22			0	29				
2:30	0	22			2	30				
2:45	0	22	2	87	0	34	3	142	5	229
3:00	1	15			1	45				
3:15	0	10			0	34				
3:30	1	10			0	19				
3:45	1	11	3	46	0	21	1	119	4	165
4:00	0	13			1	20				
4:15	0	7			0	25				
4:30	0	13			0	20				
4:45	0	18	0	51	0	12	1	77	1	128
5:00	5	14			0	27				
5:15	2	11			1	25				
5:30	1	7			0	12				
5:45	5	9	13	41	2	9	3	73	16	114
6:00	10	5			2	4				
6:15	20	7			4	11				
6:30	14	7			7	4				
6:45	31	7	75	26	7	4	20	23	95	49
7:00	81	4			20	4				
7:15	149	1			54	2				
7:30	68	5			34	3				
7:45	63	8	361	18	34	2	142	11	503	29
8:00	41	5			25	15				
8:15	21	4			19	3				
8:30	9	2			7	7				
8:45	12	1	83	12	11	3	62	28	145	40
9:00	12	2			7	0				
9:15	7	2			9	0				
9:30	11	2			8	3				
9:45	4	0	34	6	4	2	28	5	62	11
10:00	8	2			6	1				
10:15	2	3			15	0				
10:30	8	1			6	0				
10:45	18	1	36	7	11	1	38	2	74	9
11:00	10	1			25	0				
11:15	15	0			18	1				
11:30	13	0			9	1				
11:45	9	0	47	1	11	1	63	3	110	4
Total	655	405			364	590			1019	995
Percent	61.8%	38.2%			38.2%	61.8%			50.6%	49.4%

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH

52933001

11/11/2022	WB,		Hour Totals		EB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2		4		0		10		
12:15		1		11		0		8		
12:30		0		8		1		10		
12:45		0		9	3	32	1	6	2	34
1:00		0		11			0	3		5
1:15		0		4			0	6		
1:30		0		5			0	10		
1:45		0		9	0	29	0	8	0	27
2:00		0		3			1	9		0
2:15		0		11			0	4		
2:30		0		2			2	12		
2:45		1		3	1	19	0	8	3	33
3:00		0		5			1	12		4
3:15		0		1			0	3		
3:30		0		5			0	10		
3:45		1		6	1	17	0	8	1	33
4:00		0		4			0	19		2
4:15		0		2			0	6		
4:30		0		6			0	10		
4:45		1		6	1	18	1	5	1	40
5:00		0		4			0	12		2
5:15		2		5			2	7		
5:30		2		4			1	4		
5:45		3		4	7	17	1	4	4	27
6:00		5		4			1	3		11
6:15		13		6			1	6		
6:30		9		4			0	5		
6:45		5		4	32	18	2	3	4	17
7:00		8		2			2	1		36
7:15		7		4			3	1		
7:30		10		2			6	5		
7:45		14		4	39	12	3	1	14	8
8:00		6		2			2	1		53
8:15		7		3			3	1		
8:30		4		2			4	3		
8:45		5		4	22	11	2	1	11	6
9:00		3		2			8	0		33
9:15		10		0			5	1		
9:30		9		0			8	0		
9:45		9		0	31	2	4	1	25	2
10:00		7		1			6	1		56
10:15		4		1			8	3		
10:30		10		2			7	0		
10:45		6		2	27	6	12	0	33	4
11:00		7		0			7	0		60
11:15		3		0			8	0		
11:30		4		0			9	0		
11:45		9		0	23	0	6	0	30	0
Total		187		181			128	231		315
Percent		50.8%		49.2%			35.7%	64.3%		43.3%
										56.7%

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH

52933001

11/12/2022		WB,		Hour Totals		EB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	5			1	4				
12:15		0	4			0	4				
12:30		0	6			0	2				
12:45		0	0	0	15	1	1	2	11	2	26
1:00		0	4			0	2				
1:15		0	6			1	15				
1:30		0	9			1	3				
1:45		0	4	0	23	0	3	2	23	2	46
2:00		1	7			0	5				
2:15		0	3			1	2				
2:30		1	3			0	0				
2:45		0	3	2	16	0	2	1	9	3	25
3:00		0	3			0	2				
3:15		0	5			0	0				
3:30		0	5			0	3				
3:45		0	2	0	15	1	5	1	10	1	25
4:00		0	5			0	3				
4:15		0	7			0	1				
4:30		0	4			1	2				
4:45		0	5	0	21	0	0	1	6	1	27
5:00		0	4			0	2				
5:15		0	3			0	5				
5:30		1	4			0	2				
5:45		0	13	1	24	0	4	0	13	1	37
6:00		3	5			1	18				
6:15		3	3			0	5				
6:30		3	4			1	3				
6:45		2	4	11	16	0	1	2	27	13	43
7:00		1	2			1	4				
7:15		1	1			0	4				
7:30		2	0			4	0				
7:45		0	5	4	8	2	3	7	11	11	19
8:00		4	1			1	2				
8:15		2	1			1	1				
8:30		3	2			6	1				
8:45		9	0	18	4	2	1	10	5	28	9
9:00		1	5			5	2				
9:15		2	2			1	2				
9:30		11	1			7	1				
9:45		18	2	32	10	11	0	24	5	56	15
10:00		5	3			6	0				
10:15		7	2			7	0				
10:30		3	1			3	0				
10:45		7	2	22	8	7	0	23	0	45	8
11:00		5	1			2	0				
11:15		9	0			4	1				
11:30		5	1			3	0				
11:45		5	0	24	2	9	0	18	1	42	3
Total		114	162			91	121			205	283
Percent		41.3%	58.7%			42.9%	57.1%			42.0%	58.0%
Grand Total		956	748			583	942			1539	1690
Percent		56.1%	43.9%			38.2%	61.8%			47.7%	52.3%

ADT

ADT: 1,076

AADT: 1,076

Accurate Counts
978-664-2565

Location : Evans Drive
Location : East of Hanover Street
City/State: Lebanon, NH

52933001

11/7/2022	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,
12:00 AM	*	*	*	*	*	*	1	3	3	2	0	2	*	*	1	2
1:00	*	*	*	*	*	*	0	0	0	0	0	2	*	*	0	1
2:00	*	*	*	*	*	*	2	3	1	3	2	1	*	*	2	2
3:00	*	*	*	*	*	*	3	1	1	1	0	1	*	*	1	1
4:00	*	*	*	*	*	*	0	1	1	1	0	1	*	*	0	1
5:00	*	*	*	*	*	*	13	3	7	4	1	0	*	*	7	2
6:00	*	*	*	*	*	*	75	20	32	4	11	2	*	*	39	9
7:00	*	*	*	*	*	*	361	142	39	14	4	7	*	*	135	54
8:00	*	*	*	*	*	*	83	62	22	11	18	10	*	*	41	28
9:00	*	*	*	*	*	*	34	28	31	25	32	24	*	*	32	26
10:00	*	*	*	*	*	*	36	38	27	33	22	23	*	*	28	31
11:00	*	*	*	*	*	*	47	63	23	30	24	18	*	*	31	37
12:00 PM	*	*	*	*	*	*	48	50	32	34	15	11	*	*	32	32
1:00	*	*	*	*	*	*	62	57	29	27	23	23	*	*	38	36
2:00	*	*	*	*	*	*	87	142	19	33	16	9	*	*	41	61
3:00	*	*	*	*	*	*	46	119	17	33	15	10	*	*	26	54
4:00	*	*	*	*	*	*	51	77	18	40	21	6	*	*	30	41
5:00	*	*	*	*	*	*	41	73	17	27	24	13	*	*	27	38
6:00	*	*	*	*	*	*	26	23	18	17	16	27	*	*	20	22
7:00	*	*	*	*	*	*	18	11	12	8	8	11	*	*	13	10
8:00	*	*	*	*	*	*	12	28	11	6	4	5	*	*	9	13
9:00	*	*	*	*	*	*	6	5	2	2	10	5	*	*	6	4
10:00	*	*	*	*	*	*	7	2	6	4	8	0	*	*	7	2
11:00	*	*	*	*	*	*	1	3	0	0	1	0	*	*	1	1
Total	0	0	0	0	0	0	1060	954	368	359	275	211	0	0	567	508
Day	0		0		0		2014		727		486		0		1075	
AM Peak							7:00	7:00	7:00	10:00	9:00	9:00			7:00	7:00
Volume							361	142	39	33	32	24			135	54
PM Peak							2:00	2:00	12:00 PM	4:00	5:00	6:00			2:00	2:00
Volume							87	142	32	40	24	27			41	61
Comb Total	0		0		0		2014		727		486		0		1075	
ADT	ADT: 1,076		AADT: 1,076													

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH
Direction: NB,

52933002

11/10/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
3:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	1	3	7	1	0	0	0	0	0	0	0	0	12
6:00	0	0	0	16	37	15	8	0	0	0	0	0	0	0	76
7:00	0	0	7	63	217	66	10	0	0	0	0	1	0	0	364
8:00	0	0	1	16	53	10	0	1	1	0	0	0	0	0	82
9:00	0	0	2	6	15	12	3	1	0	0	0	0	0	0	39
10:00	0	0	1	11	16	6	0	0	0	0	0	0	0	0	34
11:00	0	0	2	4	28	12	1	1	0	0	0	0	0	0	48
12:00 PM	0	0	2	11	26	12	4	0	1	0	0	0	0	0	56
1:00	0	0	2	13	30	5	1	1	0	0	0	0	0	0	52
2:00	0	0	7	15	54	11	4	0	0	0	0	0	0	0	91
3:00	0	0	2	17	34	3	2	0	0	0	0	0	0	0	58
4:00	0	0	0	6	30	13	0	0	0	0	0	0	0	0	49
5:00	0	0	3	7	25	9	4	0	0	0	0	0	0	0	48
6:00	0	0	1	5	11	7	1	0	0	0	0	0	0	0	25
7:00	0	0	0	7	9	3	2	0	0	0	0	0	0	0	21
8:00	0	0	0	5	8	0	0	0	0	0	0	0	0	0	13
9:00	0	0	0	1	4	2	0	0	0	0	0	0	0	0	7
10:00	0	0	0	2	3	2	0	0	0	0	0	0	0	0	7
11:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
Total	0	0	31	210	611	190	40	4	2	0	0	1	0	0	1089

Percentile	15th
Speed	12
	14
	15
	17
Mean Speed (Average)	13.6
10 MPH Pace Speed	9-18
Number in Pace	1024
Percent in Pace	94.0%
Number > 15 MPH	237
Percent > 15 MPH	21.8%

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH
Direction: NB,

52933002

11/11/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	1	0	1	1	0	0	0	0	0	0	0	3
1:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	8	0	0	0	0	0	0	0	0	0	8
6:00	0	0	0	9	17	8	2	0	0	0	0	0	0	0	36
7:00	0	0	0	9	23	8	2	0	0	0	0	0	0	0	42
8:00	0	0	0	7	10	7	2	0	0	0	0	0	0	0	26
9:00	0	0	2	6	16	6	4	0	0	0	0	0	0	0	34
10:00	0	0	1	6	19	2	1	0	0	0	0	0	0	0	29
11:00	0	0	2	3	11	2	3	0	0	0	0	0	0	0	21
12:00 PM	0	0	2	5	20	8	1	0	0	0	0	0	0	0	36
1:00	0	0	0	7	14	7	4	0	0	0	0	0	0	0	32
2:00	0	0	2	5	12	2	2	0	0	0	0	0	0	0	23
3:00	0	0	0	3	9	3	2	0	0	0	0	0	0	0	17
4:00	0	0	0	3	11	6	1	0	0	0	0	0	0	0	21
5:00	0	0	1	2	10	6	1	0	0	0	0	0	0	0	20
6:00	0	0	0	1	11	3	3	0	0	0	0	0	0	0	18
7:00	0	0	0	3	6	3	1	1	0	0	0	0	0	0	14
8:00	0	0	0	3	6	1	0	0	0	0	0	0	0	0	10
9:00	0	0	0	1	1	0	1	0	0	0	0	0	0	0	3
10:00	0	0	0	3	4	1	0	0	0	0	0	0	0	0	8
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	10	77	210	75	31	1	0	0	0	0	0	0	404

Percentile	15th
Speed	12
	14
Mean Speed (Average)	13.9
10 MPH Pace Speed	9-18
Number in Pace	372
Percent in Pace	92.1%
Number > 15 MPH	107
Percent > 15 MPH	26.5%

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH
Direction: NB,

52933002

11/12/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:00	0	0	0	2	7	4	1	0	0	0	0	0	0	0	14
7:00	0	0	0	0	3	4	0	0	0	0	0	0	0	0	7
8:00	0	0	0	2	11	4	1	0	0	0	0	0	0	0	18
9:00	0	0	1	6	17	5	4	0	0	0	0	0	0	0	33
10:00	0	0	1	11	9	2	1	0	0	0	0	0	0	0	24
11:00	0	0	0	6	9	6	2	0	0	0	0	0	0	0	23
12:00 PM	0	0	0	4	12	3	2	0	0	0	0	0	0	0	21
1:00	0	0	0	6	15	4	2	1	0	0	0	0	0	0	28
2:00	0	0	0	1	7	9	1	0	0	0	0	0	0	0	18
3:00	0	0	0	2	6	8	0	2	0	0	0	0	0	0	18
4:00	0	0	0	3	8	9	1	1	0	0	0	0	0	0	22
5:00	0	0	0	4	17	6	1	0	0	0	0	0	0	0	28
6:00	0	0	0	5	10	3	0	0	1	0	0	0	0	0	19
7:00	0	0	0	1	6	1	0	0	0	0	0	0	0	0	8
8:00	0	0	0	0	2	2	1	0	0	0	0	0	0	0	5
9:00	0	0	0	2	6	2	1	0	0	0	0	0	0	0	11
10:00	0	0	0	2	7	0	0	0	0	0	0	0	0	0	9
11:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	0	2	59	156	72	18	4	1	0	0	0	0	0	312
Percentile				15th	50th	85th	95th								
Speed				12	14	17	19								
Mean Speed (Average)				14.1											
10 MPH Pace Speed				9-18											
Number in Pace				292											
Percent in Pace				93.6%											
Number > 15 MPH				95											
Percent > 15 MPH				30.4%											
Grand Total	0	0	43	346	977	337	89	9	3	0	0	1	0	0	1805
Stats				Percentile	15th	50th	85th	95th							
				Speed	12	15	18	19							
Mean Speed (Average)				14.8											
10 MPH Pace Speed				9-18											
Number in Pace				1688											
Percent in Pace				93.5%											
Number > 15 MPH				1336											
Percent > 15 MPH				41.5%											

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH
Direction: SB,

52933002

11/10/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	2	1	0	0	0	0	0	0	0	0	3
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
3:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3
6:00	0	0	0	0	1	2	7	0	0	0	0	0	0	0	10
7:00	0	0	19	24	57	39	6	1	0	0	0	0	0	0	146
8:00	0	0	1	5	13	21	11	0	2	0	0	0	0	0	53
9:00	0	0	0	0	3	9	10	1	0	0	0	0	0	0	23
10:00	0	0	0	0	9	11	8	1	0	0	0	0	0	0	29
11:00	0	0	0	3	15	14	23	5	0	1	0	0	0	0	61
12:00 PM	0	0	0	2	8	22	14	0	0	0	0	0	0	0	46
1:00	0	0	0	3	7	20	13	3	0	1	0	0	0	1	48
2:00	0	0	27	18	39	42	10	0	0	0	0	0	0	0	136
3:00	0	0	2	6	26	31	12	1	1	0	0	0	0	0	79
4:00	0	0	0	0	13	30	14	5	0	0	0	0	0	0	62
5:00	0	0	0	2	20	24	15	3	1	1	1	0	0	0	67
6:00	0	0	0	1	6	11	5	0	0	0	0	0	0	0	23
7:00	0	0	1	0	3	5	4	0	1	0	1	0	0	0	15
8:00	0	0	0	1	8	10	7	0	0	0	0	0	0	0	26
9:00	0	0	0	1	0	4	0	0	0	0	0	0	0	0	5
10:00	0	0	0	0	2	1	0	0	0	0	0	0	0	0	3
11:00	0	0	0	0	1	2	0	0	1	0	0	0	0	0	4
Total	0	0	50	66	238	301	160	20	6	3	2	0	0	1	847

Percentile	15th
Speed	12
	50th
	15
	85th
	19
	95th
	20
Mean Speed (Average)	15.7
10 MPH Pace Speed	11-20
Number in Pace	718
Percent in Pace	84.8%
Number > 15 MPH	493
Percent > 15 MPH	58.2%

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH
Direction: SB,

52933002

11/11/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	1	0	1	1	0	0	0	0	0	0	0	3
3:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	0	2	2	0	0	1	0	0	0	0	0	5
6:00	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3
7:00	0	0	0	0	2	7	4	0	0	0	0	0	0	0	13
8:00	0	0	0	0	1	3	6	1	1	0	0	0	0	0	12
9:00	0	0	1	0	2	9	8	0	0	1	1	0	0	0	22
10:00	0	0	1	1	9	12	4	3	1	1	2	1	0	0	35
11:00	0	0	0	1	5	12	6	1	2	0	0	0	0	0	27
12:00 PM	0	0	0	1	8	16	7	0	0	1	0	0	0	0	33
1:00	0	0	0	0	6	9	10	0	0	0	0	0	0	0	25
2:00	0	0	2	5	8	3	10	3	0	1	0	0	0	0	32
3:00	0	0	0	1	8	11	5	2	0	0	0	0	0	0	27
4:00	0	0	0	1	8	15	14	0	0	0	0	0	0	0	38
5:00	0	0	0	1	9	11	4	0	0	1	0	0	0	0	26
6:00	0	0	0	1	10	2	4	0	1	0	0	0	0	0	18
7:00	0	0	0	1	3	4	3	0	1	0	0	0	0	0	12
8:00	0	0	0	0	2	2	0	0	0	0	0	0	0	0	4
9:00	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
10:00	0	0	0	0	2	2	0	0	0	0	0	0	0	0	4
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	4	15	87	123	88	10	9	5	3	1	0	0	345

Percentile	15th	50th	85th	95th
Speed	14	17	19	24
Mean Speed (Average)	17.0			
10 MPH Pace Speed	11-20			
Number in Pace	301			
Percent in Pace	87.2%			
Number > 15 MPH	239			
Percent > 15 MPH	69.3%			

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH
Direction: SB,

52933002

11/12/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
1:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
2:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
7:00	0	0	0	0	1	3	4	0	0	0	0	0	0	0	8
8:00	0	0	0	1	1	7	2	0	0	0	0	0	0	0	11
9:00	0	0	1	1	1	10	9	0	1	0	0	0	0	0	23
10:00	0	0	0	0	2	12	7	2	0	0	0	0	0	0	23
11:00	0	0	0	1	5	5	6	0	1	0	0	0	0	0	18
12:00 PM	0	0	0	0	8	2	1	2	0	0	0	0	0	0	13
1:00	0	0	0	0	3	10	9	0	0	0	0	0	0	0	22
2:00	0	0	0	0	2	5	5	0	0	0	0	0	0	0	12
3:00	0	0	0	0	1	7	2	0	1	0	0	0	0	0	11
4:00	0	0	0	1	2	4	0	0	0	0	0	0	0	0	7
5:00	0	0	1	0	5	2	5	0	1	0	0	0	0	0	14
6:00	0	0	0	2	8	12	4	0	1	1	0	0	0	0	28
7:00	0	0	0	0	3	8	2	0	0	0	0	0	0	0	13
8:00	0	0	0	0	1	0	2	0	0	0	1	0	0	0	4
9:00	0	0	0	0	1	2	2	0	0	0	0	0	0	0	5
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	7	47	93	61	4	5	1	1	0	0	0	221
Percentile				15th	50th	85th	95th								
Speed				14	17	19	20								
Mean Speed (Average)				16.9											
10 MPH Pace Speed				11-20											
Number in Pace				202											
Percent in Pace				91.4%											
Number > 15 MPH				165											
Percent > 15 MPH				74.7%											
Grand Total	0	0	56	88	372	517	309	34	20	9	6	1	0	1	1413
Stats				Percentile	15th	50th	85th	95th							
				Speed	13	16	19	21							
Mean Speed (Average)				16.2											
10 MPH Pace Speed				11-20											
Number in Pace				1220											
Percent in Pace				86.3%											
Number > 15 MPH				897											
Percent > 15 MPH				63.5%											

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH
Direction: Combined

52933002

11/10/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	3	1	0	0	0	0	0	0	0	0	4
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	4	1	0	0	0	0	0	0	0	0	5
3:00	0	0	0	1	1	0	1	0	0	0	0	0	0	0	3
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	1	3	8	3	0	0	0	0	0	0	0	0	15
6:00	0	0	0	16	38	17	15	0	0	0	0	0	0	0	86
7:00	0	0	26	87	274	105	16	1	0	0	0	1	0	0	510
8:00	0	0	2	21	66	31	11	1	3	0	0	0	0	0	135
9:00	0	0	2	6	18	21	13	2	0	0	0	0	0	0	62
10:00	0	0	1	11	25	17	8	1	0	0	0	0	0	0	63
11:00	0	0	2	7	43	26	24	6	0	1	0	0	0	0	109
12:00 PM	0	0	2	13	34	34	18	0	1	0	0	0	0	0	102
1:00	0	0	2	16	37	25	14	4	0	1	0	0	0	1	100
2:00	0	0	34	33	93	53	14	0	0	0	0	0	0	0	227
3:00	0	0	4	23	60	34	14	1	1	0	0	0	0	0	137
4:00	0	0	0	6	43	43	14	5	0	0	0	0	0	0	111
5:00	0	0	3	9	45	33	19	3	1	1	1	0	0	0	115
6:00	0	0	1	6	17	18	6	0	0	0	0	0	0	0	48
7:00	0	0	1	7	12	8	6	0	1	0	1	0	0	0	36
8:00	0	0	0	6	16	10	7	0	0	0	0	0	0	0	39
9:00	0	0	0	2	4	6	0	0	0	0	0	0	0	0	12
10:00	0	0	0	2	5	3	0	0	0	0	0	0	0	0	10
11:00	0	0	0	1	2	2	0	0	1	0	0	0	0	0	6
Total	0	0	81	276	849	491	200	24	8	3	2	1	0	1	1936

Percentile	15th
Speed	12
	14
Mean Speed (Average)	14.5
10 MPH Pace Speed	9-18
Number in Pace	1679
Percent in Pace	86.7%
Number > 15 MPH	730
Percent > 15 MPH	37.7%

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH
Direction: Combined

52933002

11/11/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	2	0	1	1	0	1	0	0	0	0	0	5
1:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
2:00	0	0	0	1	1	1	1	0	0	0	0	0	0	0	4
3:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	0	10	2	0	0	1	0	0	0	0	0	13
6:00	0	0	0	9	17	10	3	0	0	0	0	0	0	0	39
7:00	0	0	0	9	25	15	6	0	0	0	0	0	0	0	55
8:00	0	0	0	7	11	10	8	1	1	0	0	0	0	0	38
9:00	0	0	3	6	18	15	12	0	0	1	1	0	0	0	56
10:00	0	0	2	7	28	14	5	3	1	1	2	1	0	0	64
11:00	0	0	2	4	16	14	9	1	2	0	0	0	0	0	48
12:00 PM	0	0	2	6	28	24	8	0	0	1	0	0	0	0	69
1:00	0	0	0	7	20	16	14	0	0	0	0	0	0	0	57
2:00	0	0	4	10	20	5	12	3	0	1	0	0	0	0	55
3:00	0	0	0	4	17	14	7	2	0	0	0	0	0	0	44
4:00	0	0	0	4	19	21	15	0	0	0	0	0	0	0	59
5:00	0	0	1	3	19	17	5	0	0	1	0	0	0	0	46
6:00	0	0	0	2	21	5	7	0	1	0	0	0	0	0	36
7:00	0	0	0	4	9	7	4	1	1	0	0	0	0	0	26
8:00	0	0	0	3	8	3	0	0	0	0	0	0	0	0	14
9:00	0	0	0	1	1	0	2	0	1	0	0	0	0	0	5
10:00	0	0	0	3	6	3	0	0	0	0	0	0	0	0	12
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	14	92	297	198	119	11	9	5	3	1	0	0	749

Percentile	15th
Speed	12
	50th
	15
	85th
	18
	95th
	20
Mean Speed (Average)	15.3
10 MPH Pace Speed	11-20
Number in Pace	644
Percent in Pace	86.0%
Number > 15 MPH	346
Percent > 15 MPH	46.2%

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH
Direction: Combined

52933002

11/12/2022	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	1	2	1	0	0	0	0	0	0	0	0	4
1:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
2:00	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3
3:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:00	0	0	0	2	7	5	2	0	0	0	0	0	0	0	16
7:00	0	0	0	0	4	7	4	0	0	0	0	0	0	0	15
8:00	0	0	0	3	12	11	3	0	0	0	0	0	0	0	29
9:00	0	0	2	7	18	15	13	0	1	0	0	0	0	0	56
10:00	0	0	1	11	11	14	8	2	0	0	0	0	0	0	47
11:00	0	0	0	7	14	11	8	0	1	0	0	0	0	0	41
12:00 PM	0	0	0	4	20	5	3	2	0	0	0	0	0	0	34
1:00	0	0	0	6	18	14	11	1	0	0	0	0	0	0	50
2:00	0	0	0	1	9	14	6	0	0	0	0	0	0	0	30
3:00	0	0	0	2	7	15	2	2	1	0	0	0	0	0	29
4:00	0	0	0	4	10	13	1	1	0	0	0	0	0	0	29
5:00	0	0	1	4	22	8	6	0	1	0	0	0	0	0	42
6:00	0	0	0	7	18	15	4	0	2	1	0	0	0	0	47
7:00	0	0	0	1	9	9	2	0	0	0	0	0	0	0	21
8:00	0	0	0	0	3	2	3	0	0	0	1	0	0	0	9
9:00	0	0	0	2	7	4	3	0	0	0	0	0	0	0	16
10:00	0	0	0	2	7	0	0	0	0	0	0	0	0	0	9
11:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	0	4	66	203	165	79	8	6	1	1	0	0	0	533
Percentile															
Speed				15th	50th	85th	95th								
Mean Speed (Average)				12	15	18	20								
10 MPH Pace Speed				15.3											
Number in Pace				11-20											
Percent in Pace				469											
Number > 15 MPH				88.0%											
Percent > 15 MPH				260											
				48.8%											
Grand Total	0	0	99	434	1349	854	398	43	23	9	6	2	0	1	3218
Stats															
Percentile				15th	50th	85th	95th								
Speed				12	15	18	19								
Mean Speed (Average)				14.8											
10 MPH Pace Speed				9-18											
Number in Pace				2760											
Percent in Pace				85.8%											
Number > 15 MPH				1336											
Percent > 15 MPH				41.5%											

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH

52933002

11/10/2022	NB,		Hour Totals		SB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	13			1	9				
12:15	0	20			2	22				
12:30	1	12			0	10				
12:45	0	11	1	56	0	5	3	46	4	102
1:00	0	12			0	11				
1:15	0	8			0	20				
1:30	0	10			0	10				
1:45	0	22	0	52	0	7	0	48	0	100
2:00	2	27			1	45				
2:15	0	21			0	29				
2:30	0	21			2	30				
2:45	0	22	2	91	0	32	3	136	5	227
3:00	1	28			1	25				
3:15	0	11			0	24				
3:30	0	9			0	13				
3:45	1	10	2	58	0	17	1	79	3	137
4:00	0	12			1	20				
4:15	0	6			0	18				
4:30	0	13			0	13				
4:45	0	18	0	49	0	11	1	62	1	111
5:00	4	16			0	23				
5:15	2	14			1	24				
5:30	1	9			0	11				
5:45	5	9	12	48	2	9	3	67	15	115
6:00	11	4			0	4				
6:15	19	6			3	12				
6:30	17	7			2	2				
6:45	29	8	76	25	5	5	10	23	86	48
7:00	72	3			23	4				
7:15	162	4			53	3				
7:30	67	5			32	5				
7:45	63	9	364	21	38	3	146	15	510	36
8:00	39	5			22	16				
8:15	26	4			17	2				
8:30	8	4			6	7				
8:45	9	0	82	13	8	1	53	26	135	39
9:00	14	2			6	0				
9:15	6	2			8	0				
9:30	13	3			4	3				
9:45	6	0	39	7	5	2	23	5	62	12
10:00	10	2			5	1				
10:15	2	3			12	0				
10:30	5	1			5	0				
10:45	17	1	34	7	7	2	29	3	63	10
11:00	9	1			25	0				
11:15	13	0			18	1				
11:30	16	0			9	2				
11:45	10	1	48	2	9	1	61	4	109	6
Total	660	429			333	514			993	943
Percent	60.6%	39.4%			39.3%	60.7%			51.3%	48.7%

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH

52933002

11/11/2022	NB,		Hour Totals		SB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2		6		0		8		
12:15		1		12		0		8		
12:30		0		9		1		11		
12:45		0		9	3	36	1	6	2	33
1:00		0		12			0	2		
1:15		1		4			0	6		
1:30		0		5			0	9		
1:45		0		11	1	32	0	8	0	25
2:00		0		7			1	9		
2:15		0		10			0	3		
2:30		0		3			2	12		
2:45		1		3	1	23	0	8	3	32
3:00		0		6			1	10		
3:15		0		1			0	2		
3:30		0		4			0	9		
3:45		1		6	1	17	0	6	1	27
4:00		0		4			0	16		
4:15		0		2			0	7		
4:30		0		7			0	10		
4:45		0		8	0	21	1	5	1	38
5:00		1		5			0	11		
5:15		1		6			2	8		
5:30		2		4			1	3		
5:45		4		5	8	20	2	4	5	26
6:00		4		4			0	3		
6:15		15		6			1	6		
6:30		11		4			0	6		
6:45		6		4	36	18	2	3	3	18
7:00		7		2			1	2		
7:15		7		5			3	4		
7:30		12		3			6	5		
7:45		16		4	42	14	3	1	13	12
8:00		8		1			2	0		
8:15		10		3			4	1		
8:30		3		2			4	2		
8:45		5		4	26	10	2	1	12	4
9:00		5		2			8	0		
9:15		12		0			7	0		
9:30		9		1			3	1		
9:45		8		0	34	3	4	1	22	2
10:00		8		2			6	1		
10:15		4		1			8	2		
10:30		12		2			8	1		
10:45		5		3	29	8	13	0	35	4
11:00		6		0			5	0		
11:15		3		0			8	0		
11:30		3		0			8	0		
11:45		9		0	21	0	6	0	27	0
Total		202		202			124	221		
Percent		50.0%		50.0%			35.9%	64.1%		
									326	423
									43.5%	56.5%

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH

52933002

11/12/2022		NB,		Hour Totals		SB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	6			1	4				
12:15		0	4			0	5				
12:30		0	7			0	2				
12:45		2	4	2	21	1	2	2	13	4	34
1:00		0	5			0	4				
1:15		0	6			1	13				
1:30		0	9			1	2				
1:45		0	8	0	28	0	3	2	22	2	50
2:00		1	7			1	6				
2:15		0	5			0	4				
2:30		1	3			0	0				
2:45		0	3	2	18	0	2	1	12	3	30
3:00		0	3			0	3				
3:15		0	6			0	0				
3:30		0	7			0	3				
3:45		0	2	0	18	1	5	1	11	1	29
4:00		0	5			0	3				
4:15		0	7			0	3				
4:30		0	4			1	1				
4:45		0	6	0	22	0	0	1	7	1	29
5:00		0	5			0	2				
5:15		0	5			0	5				
5:30		1	5			0	3				
5:45		0	13	1	28	0	4	0	14	1	42
6:00		4	6			1	18				
6:15		5	3			0	6				
6:30		3	5			1	3				
6:45		2	5	14	19	0	1	2	28	16	47
7:00		2	2			1	4				
7:15		1	1			1	5				
7:30		3	0			5	0				
7:45		1	5	7	8	1	4	8	13	15	21
8:00		4	1			1	1				
8:15		2	1			1	2				
8:30		3	2			6	0				
8:45		9	1	18	5	3	1	11	4	29	9
9:00		1	5			5	2				
9:15		3	1			2	2				
9:30		12	1			6	1				
9:45		17	4	33	11	10	0	23	5	56	16
10:00		5	2			6	0				
10:15		7	3			7	0				
10:30		5	2			3	0				
10:45		7	2	24	9	7	0	23	0	47	9
11:00		4	1			3	0				
11:15		9	0			5	1				
11:30		5	1			3	0				
11:45		5	0	23	2	7	0	18	1	41	3
Total		124	189			92	130			216	319
Percent		39.6%	60.4%			41.4%	58.6%			40.4%	59.6%
Grand Total		986	820			549	865			1535	1685
Percent		54.6%	45.4%			38.8%	61.2%			47.7%	52.3%

ADT

ADT: 1,073

AADT: 1,073

Accurate Counts
978-664-2565

Location : Hanover Street
Location : North of Evans Drive
City/State: Lebanon, NH

52933002

11/7/2022	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,
12:00 AM	*	*	*	*	*	*	1	3	3	2	2	2	*	*	2	2
1:00	*	*	*	*	*	*	0	0	1	0	0	2	*	*	0	1
2:00	*	*	*	*	*	*	2	3	1	3	2	1	*	*	2	2
3:00	*	*	*	*	*	*	2	1	1	1	0	1	*	*	1	1
4:00	*	*	*	*	*	*	0	1	0	1	0	1	*	*	0	1
5:00	*	*	*	*	*	*	12	3	8	5	1	0	*	*	7	3
6:00	*	*	*	*	*	*	76	10	36	3	14	2	*	*	42	5
7:00	*	*	*	*	*	*	364	146	42	13	7	8	*	*	138	56
8:00	*	*	*	*	*	*	82	53	26	12	18	11	*	*	42	25
9:00	*	*	*	*	*	*	39	23	34	22	33	23	*	*	35	23
10:00	*	*	*	*	*	*	34	29	29	35	24	23	*	*	29	29
11:00	*	*	*	*	*	*	48	61	21	27	23	18	*	*	31	35
12:00 PM	*	*	*	*	*	*	56	46	36	33	21	13	*	*	38	31
1:00	*	*	*	*	*	*	52	48	32	25	28	22	*	*	37	32
2:00	*	*	*	*	*	*	91	136	23	32	18	12	*	*	44	60
3:00	*	*	*	*	*	*	58	79	17	27	18	11	*	*	31	39
4:00	*	*	*	*	*	*	49	62	21	38	22	7	*	*	31	36
5:00	*	*	*	*	*	*	48	67	20	26	28	14	*	*	32	36
6:00	*	*	*	*	*	*	25	23	18	18	19	28	*	*	21	23
7:00	*	*	*	*	*	*	21	15	14	12	8	13	*	*	14	13
8:00	*	*	*	*	*	*	13	26	10	4	5	4	*	*	9	11
9:00	*	*	*	*	*	*	7	5	3	2	11	5	*	*	7	4
10:00	*	*	*	*	*	*	7	3	8	4	9	0	*	*	8	2
11:00	*	*	*	*	*	*	2	4	0	0	1	0	*	*	1	1
Total	0	0	0	0	0	0	1089	847	404	345	312	221	0	0	602	471
Day	0		0		0		1936		749		533		0		1073	
AM Peak							7:00	7:00	7:00	10:00	9:00	9:00			7:00	7:00
Volume							364	146	42	35	33	23			138	56
PM Peak							2:00	2:00	12:00 PM	4:00	1:00	6:00			2:00	2:00
Volume							91	136	36	38	28	28			44	60
Comb Total	0		0		0		1936		749		533		0		1073	
ADT	ADT: 1,073		AADT: 1,073													

Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

	Hanover St From North		Evans Dr From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	21	1	4	74	0	0	100
07:15 AM	54	0	0	155	0	0	209
07:30 AM	33	0	0	67	0	0	100
07:45 AM	34	1	0	64	0	1	100
Total	142	2	4	360	0	1	509
08:00 AM	22	1	0	41	1	0	65
08:15 AM	17	1	0	22	0	0	40
08:30 AM	6	0	0	8	0	1	15
08:45 AM	8	0	1	11	0	0	20
Total	53	2	1	82	1	1	140
Grand Total	195	4	5	442	1	2	649
Apprch %	98	2	1.1	98.9	33.3	66.7	
Total %	30	0.6	0.8	68.1	0.2	0.3	
Cars	190	4	5	441	1	2	643
% Cars	97.4	100	100	99.8	100	100	99.1
Trucks	5	0	0	1	0	0	6
% Trucks	2.6	0	0	0.2	0	0	0.9

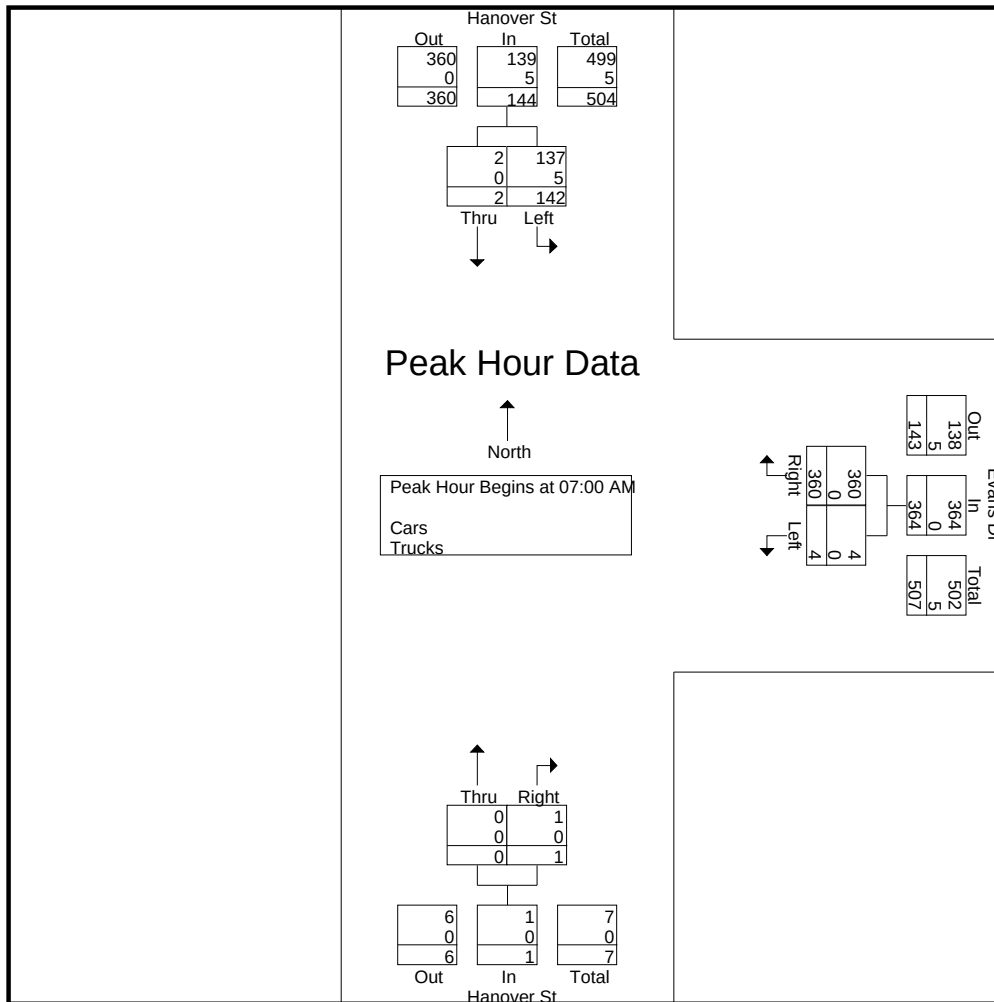
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	21	1	22	4	74	78	0	0	0	100
07:15 AM	54	0	54	0	155	155	0	0	0	209
07:30 AM	33	0	33	0	67	67	0	0	0	100
07:45 AM	34	1	35	0	64	64	0	1	1	100
Total Volume	142	2	144	4	360	364	0	1	1	509
% App. Total	98.6	1.4		1.1	98.9		0	100		
PHF	.657	.500	.667	.250	.581	.587	.000	.250	.250	.609
Cars	137	2	139	4	360	364	0	1	1	504
% Cars	96.5	100	96.5	100	100	100	0	100	100	99.0
Trucks	5	0	5	0	0	0	0	0	0	5
% Trucks	3.5	0	3.5	0	0	0	0	0	0	1.0

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

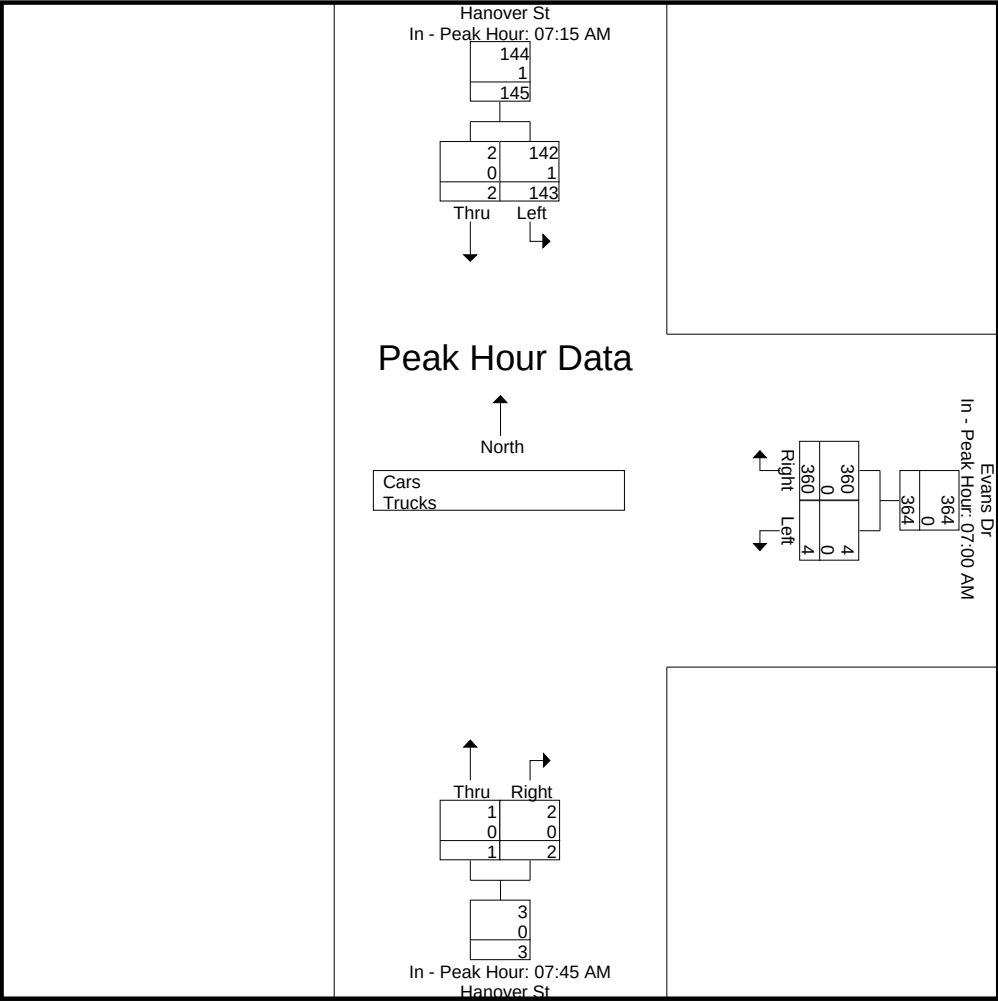
	07:15 AM			07:00 AM			07:45 AM		
+0 mins.	54	0	54	4	74	78	0	1	1
+15 mins.	33	0	33	0	155	155	1	0	1
+30 mins.	34	1	35	0	67	67	0	0	0
+45 mins.	22	1	23	0	64	64	0	1	1
Total Volume	143	2	145	4	360	364	1	2	3
% App. Total	98.6	1.4		1.1	98.9		33.3	66.7	
PHF	.662	.500	.671	.250	.581	.587	.250	.500	.750
Cars	142	2	144	4	360	364	1	2	3
% Cars	99.3	100	99.3	100	100	100	100	100	100
Trucks	1	0	1	0	0	0	0	0	0
% Trucks	0.7	0	0.7	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 3



Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 4

Groups Printed- Cars

	Hanover St From North		Evans Dr From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	17	1	4	74	0	0	96
07:15 AM	54	0	0	155	0	0	209
07:30 AM	33	0	0	67	0	0	100
07:45 AM	33	1	0	64	0	1	99
Total	137	2	4	360	0	1	504
08:00 AM	22	1	0	41	1	0	65
08:15 AM	17	1	0	22	0	0	40
08:30 AM	6	0	0	7	0	1	14
08:45 AM	8	0	1	11	0	0	20
Total	53	2	1	81	1	1	139
Grand Total	190	4	5	441	1	2	643
Apprch %	97.9	2.1	1.1	98.9	33.3	66.7	
Total %	29.5	0.6	0.8	68.6	0.2	0.3	

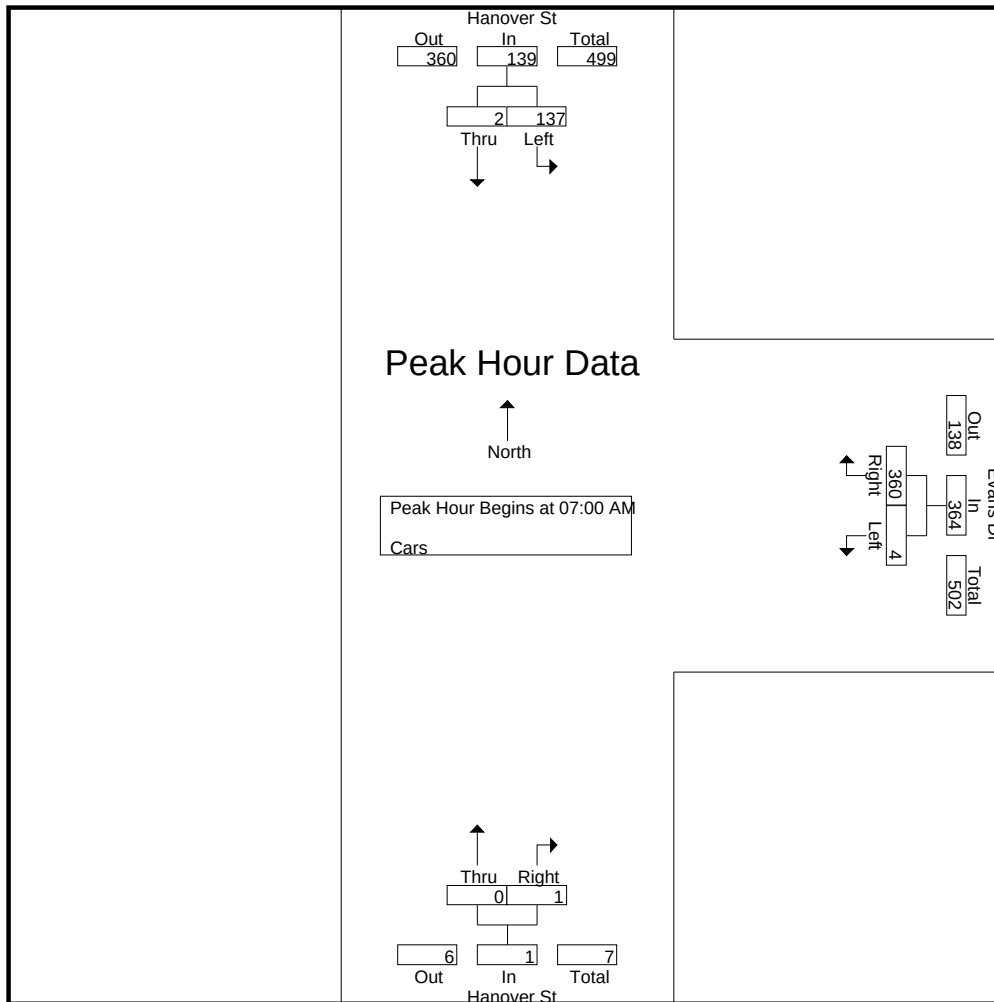
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	17	1	18	4	74	78	0	0	0	96
07:15 AM	54	0	54	0	155	155	0	0	0	209
07:30 AM	33	0	33	0	67	67	0	0	0	100
07:45 AM	33	1	34	0	64	64	0	1	1	99
Total Volume	137	2	139	4	360	364	0	1	1	504
% App. Total	98.6	1.4		1.1	98.9		0	100		
PHF	.634	.500	.644	.250	.581	.587	.000	.250	.250	.603

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 5

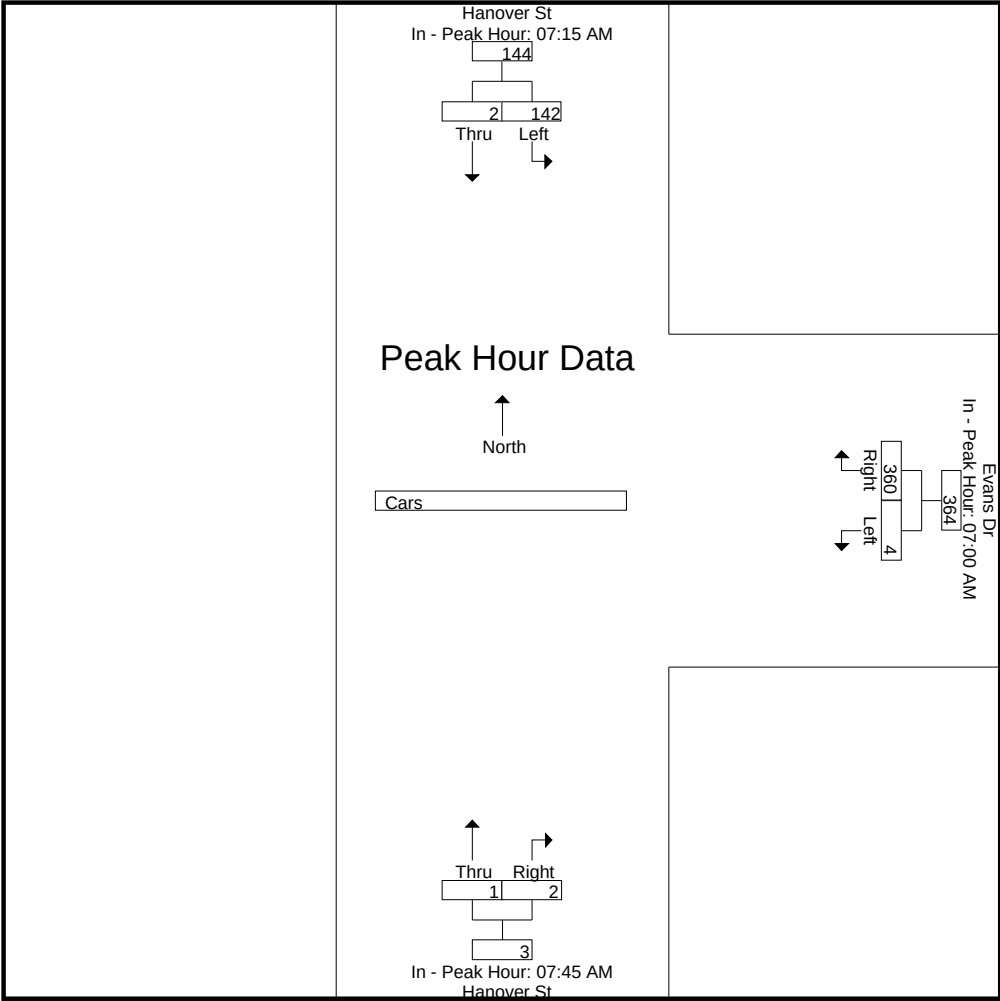


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:45 AM		
+0 mins.	54	0	54	4	74	78	0	1	1
+15 mins.	33	0	33	0	155	155	1	0	1
+30 mins.	33	1	34	0	67	67	0	0	0
+45 mins.	22	1	23	0	64	64	0	1	1
Total Volume	142	2	144	4	360	364	1	2	3
% App. Total	98.6	1.4		1.1	98.9		33.3	66.7	
PHF	.657	.500	.667	.250	.581	.587	.250	.500	.750

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 7

Groups Printed- Trucks

	Hanover St From North		Evans Dr From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	4	0	0	0	0	0	4
07:15 AM	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	1	0	0	0	0	0	1
Total	5	0	0	0	0	0	5
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0
08:30 AM	0	0	0	1	0	0	1
08:45 AM	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	1
Grand Total	5	0	0	1	0	0	6
Apprch %	100	0	0	100	0	0	
Total %	83.3	0	0	16.7	0	0	

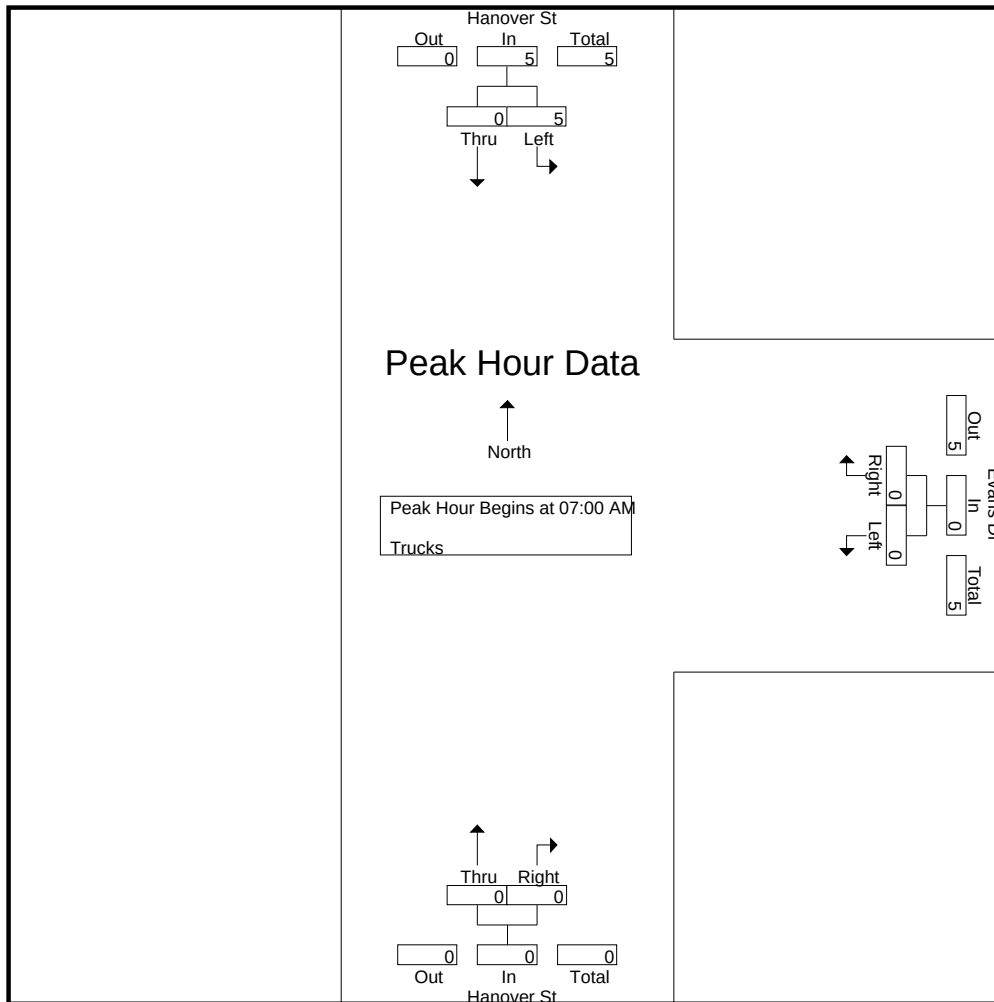
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	4	0	4	0	0	0	0	0	0	4
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	0	1	0	0	0	0	0	0	1
Total Volume	5	0	5	0	0	0	0	0	0	5
% App. Total	100	0		0	0		0	0		
PHF	.313	.000	.313	.000	.000	.000	.000	.000	.000	.313

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 8

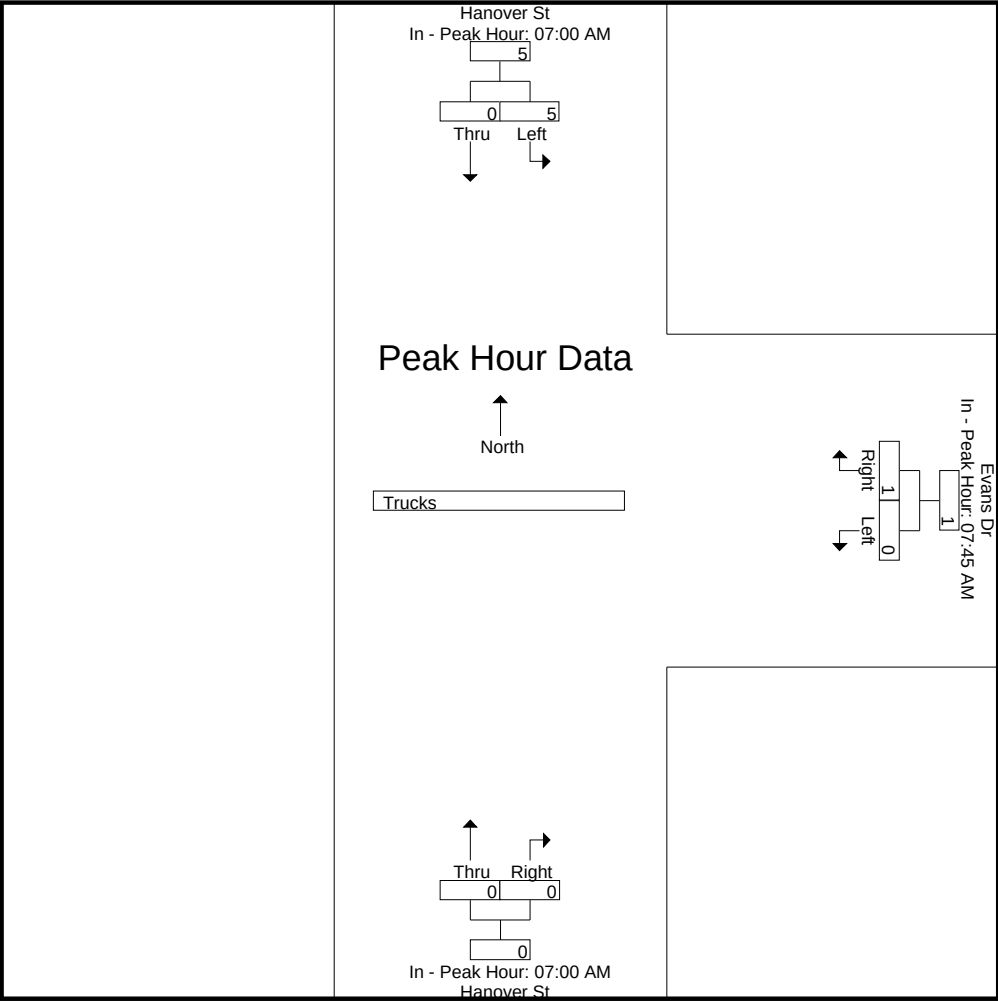


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:45 AM			07:00 AM		
+0 mins.	4	0	4	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	1	0	1	0	1	1	0	0	0
Total Volume	5	0	5	0	1	1	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.313	.000	.313	.000	.250	.250	.000	.000	.000

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 10

Groups Printed- Bikes Peds

	Hanover St From North			Evans Dr From East			Hanover St From South			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
07:00 AM	0	0	0	0	0	13	1	0	0	13	1	14
07:15 AM	0	1	0	0	0	9	4	0	0	9	5	14
07:30 AM	0	1	0	0	0	11	1	0	0	11	2	13
07:45 AM	0	2	0	0	0	20	4	0	0	20	6	26
Total	0	4	0	0	0	53	10	0	0	53	14	67
08:00 AM	0	0	0	1	0	7	1	0	0	7	2	9
08:15 AM	0	0	0	0	0	2	0	0	0	2	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	3	1	0	0	3	1	4
Total	0	0	0	1	0	12	2	0	0	12	3	15
Grand Total	0	4	0	1	0	65	12	0	0	65	17	82
Apprch %	0	100		100	0		100	0				
Total %	0	23.5		5.9	0		70.6	0		79.3	20.7	

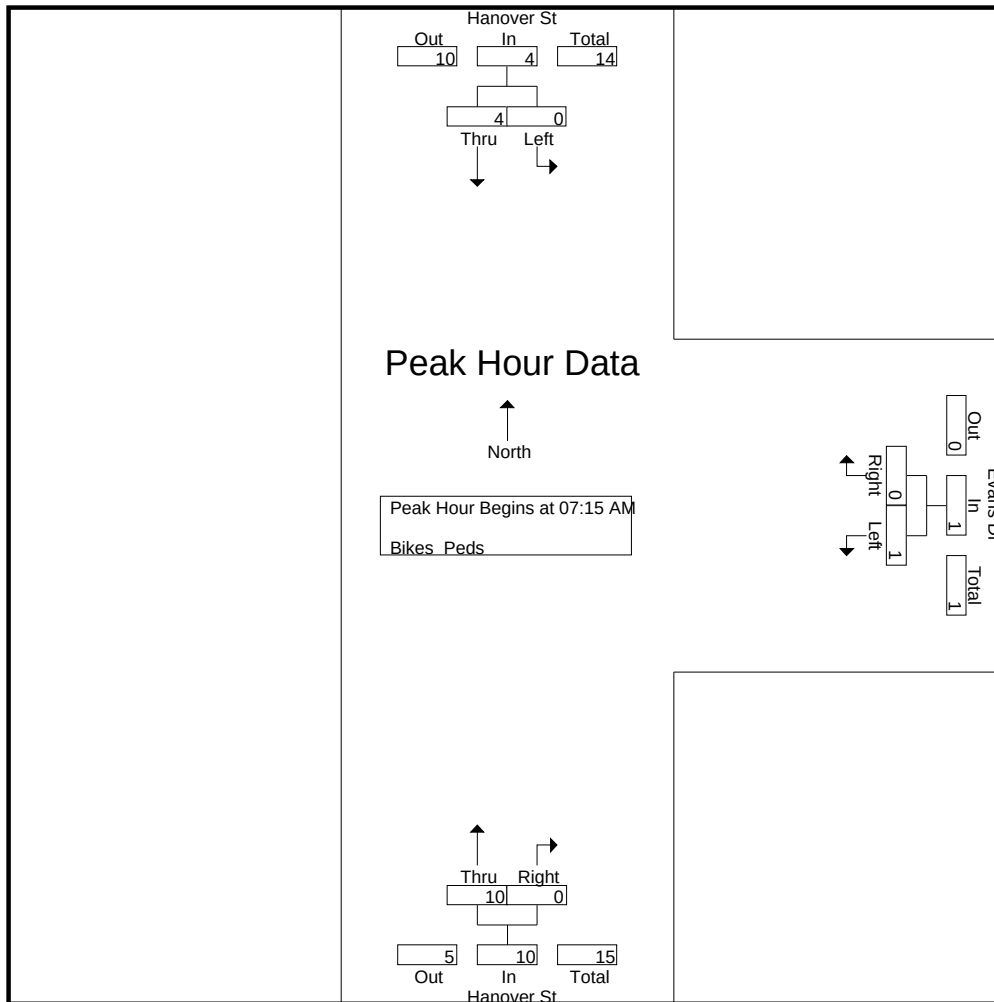
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	1	1	0	0	0	4	0	4	5
07:30 AM	0	1	1	0	0	0	1	0	1	2
07:45 AM	0	2	2	0	0	0	4	0	4	6
08:00 AM	0	0	0	1	0	1	1	0	1	2
Total Volume	0	4	4	1	0	1	10	0	10	15
% App. Total	0	100		100	0		100	0		
PHF	.000	.500	.500	.250	.000	.250	.625	.000	.625	.625

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 11

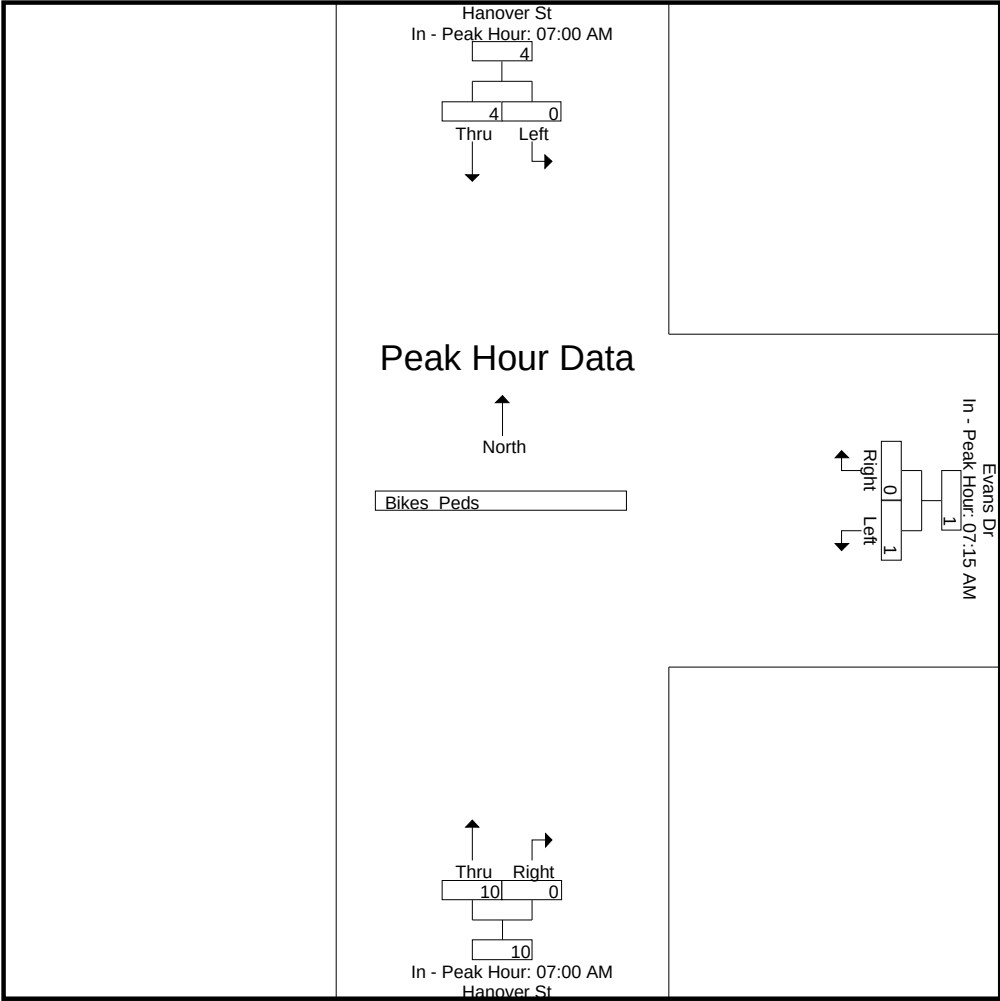


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:15 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	1	0	1
+15 mins.	0	1	1	0	0	0	4	0	4
+30 mins.	0	1	1	0	0	0	1	0	1
+45 mins.	0	2	2	1	0	1	4	0	4
Total Volume	0	4	4	1	0	1	10	0	10
% App. Total	0	100		100	0		100	0	
PHF	.000	.500	.500	.250	.000	.250	.625	.000	.625

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

	Hanover St From North		Evans Dr From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
02:00 PM	46	1	0	22	1	1	71
02:15 PM	26	0	0	20	0	2	48
02:30 PM	30	0	0	22	0	0	52
02:45 PM	30	0	0	23	0	0	53
Total	132	1	0	87	1	3	224
03:00 PM	25	0	0	26	0	0	51
03:15 PM	25	0	0	10	0	0	35
03:30 PM	13	0	0	9	0	1	23
03:45 PM	18	0	0	11	0	0	29
Total	81	0	0	56	0	1	138
04:00 PM	18	1	1	10	0	1	31
04:15 PM	18	0	1	5	0	0	24
04:30 PM	13	1	1	12	1	2	30
04:45 PM	11	0	0	18	0	0	29
Total	60	2	3	45	1	3	114
05:00 PM	25	1	0	15	0	1	42
05:15 PM	23	2	0	12	2	0	39
05:30 PM	11	0	0	7	0	0	18
05:45 PM	9	0	0	9	0	0	18
Total	68	3	0	43	2	1	117
Grand Total	341	6	3	231	4	8	593
Apprch %	98.3	1.7	1.3	98.7	33.3	66.7	
Total %	57.5	1	0.5	39	0.7	1.3	
Cars	341	6	3	227	4	8	589
% Cars	100	100	100	98.3	100	100	99.3
Trucks	0	0	0	4	0	0	4
% Trucks	0	0	0	1.7	0	0	0.7

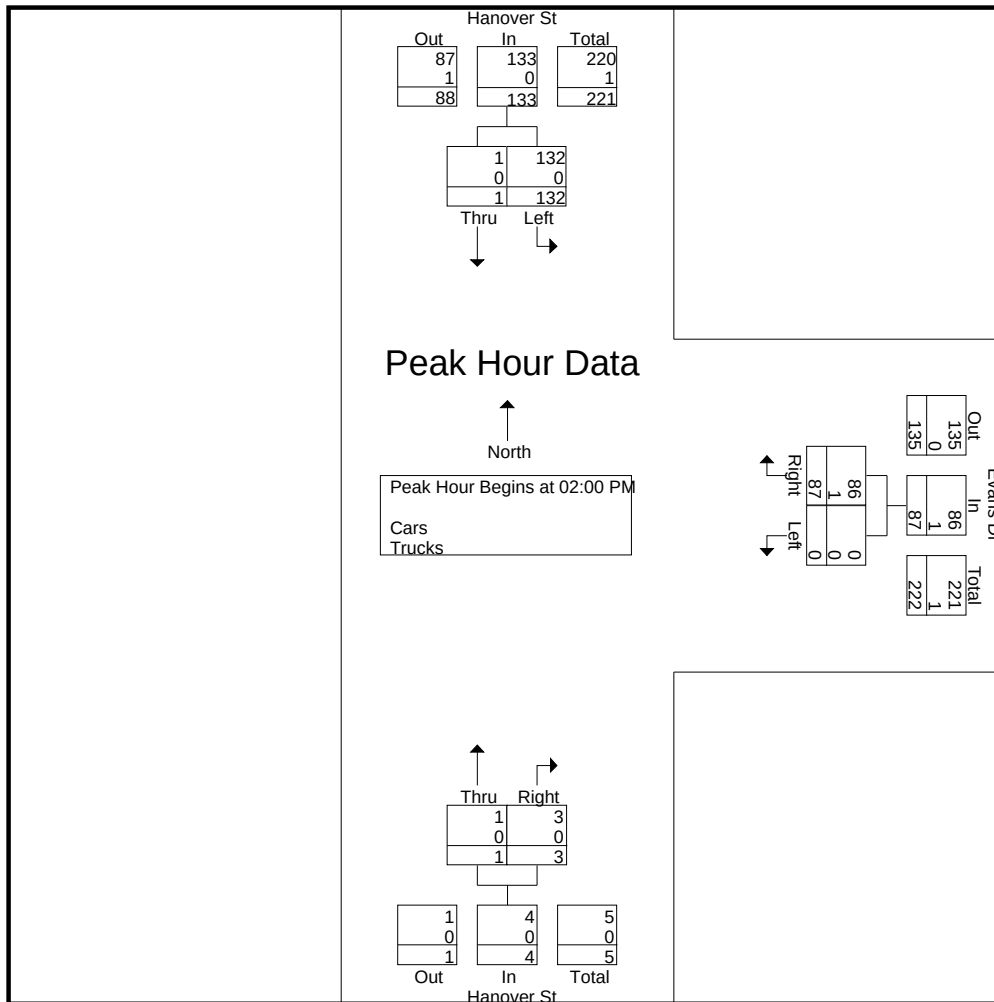
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	46	1	47	0	22	22	1	1	2	71
02:15 PM	26	0	26	0	20	20	0	2	2	48
02:30 PM	30	0	30	0	22	22	0	0	0	52
02:45 PM	30	0	30	0	23	23	0	0	0	53
Total Volume	132	1	133	0	87	87	1	3	4	224
% App. Total	99.2	0.8		0	100		25	75		
PHF	.717	.250	.707	.000	.946	.946	.250	.375	.500	.789
Cars	132	1	133	0	86	86	1	3	4	223
% Cars	100	100	100	0	98.9	98.9	100	100	100	99.6
Trucks	0	0	0	0	1	1	0	0	0	1
% Trucks	0	0	0	0	1.1	1.1	0	0	0	0.4

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 2



Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

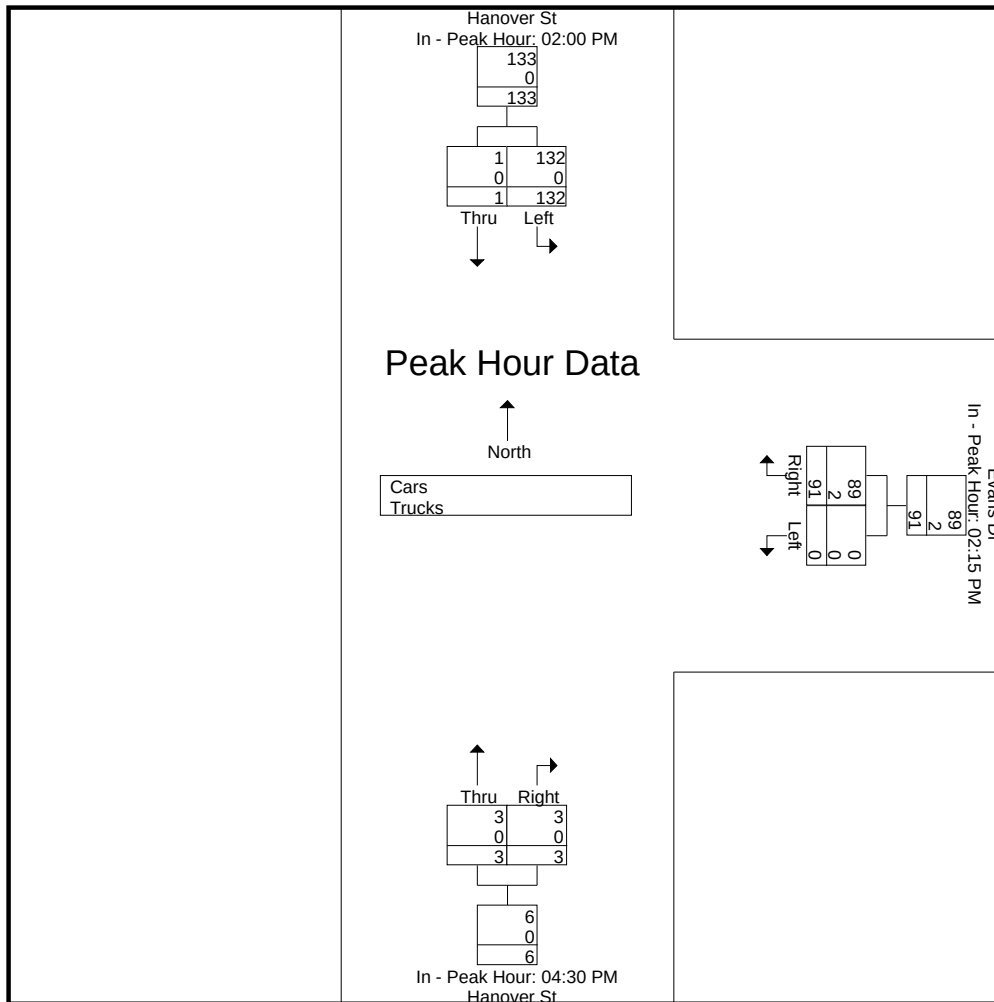
	02:00 PM			02:15 PM			04:30 PM		
+0 mins.	46	1	47	0	20	20	1	2	3
+15 mins.	26	0	26	0	22	22	0	0	0
+30 mins.	30	0	30	0	23	23	0	1	1
+45 mins.	30	0	30	0	26	26	2	0	2
Total Volume	132	1	133	0	91	91	3	3	6
% App. Total	99.2	0.8		0	100		50	50	
PHF	.717	.250	.707	.000	.875	.875	.375	.375	.500
Cars	132	1	133	0	89	89	3	3	6
% Cars	100	100	100	0	97.8	97.8	100	100	100
Trucks	0	0	0	0	2	2	0	0	0
% Trucks	0	0	0	0	2.2	2.2	0	0	0

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 3



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 4

Groups Printed- Cars

	Hanover St From North		Evans Dr From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
02:00 PM	46	1	0	22	1	1	71
02:15 PM	26	0	0	19	0	2	47
02:30 PM	30	0	0	22	0	0	52
02:45 PM	30	0	0	23	0	0	53
Total	132	1	0	86	1	3	223
03:00 PM	25	0	0	25	0	0	50
03:15 PM	25	0	0	10	0	0	35
03:30 PM	13	0	0	9	0	1	23
03:45 PM	18	0	0	10	0	0	28
Total	81	0	0	54	0	1	136
04:00 PM	18	1	1	10	0	1	31
04:15 PM	18	0	1	5	0	0	24
04:30 PM	13	1	1	11	1	2	29
04:45 PM	11	0	0	18	0	0	29
Total	60	2	3	44	1	3	113
05:00 PM	25	1	0	15	0	1	42
05:15 PM	23	2	0	12	2	0	39
05:30 PM	11	0	0	7	0	0	18
05:45 PM	9	0	0	9	0	0	18
Total	68	3	0	43	2	1	117
Grand Total	341	6	3	227	4	8	589
Apprch %	98.3	1.7	1.3	98.7	33.3	66.7	
Total %	57.9	1	0.5	38.5	0.7	1.4	

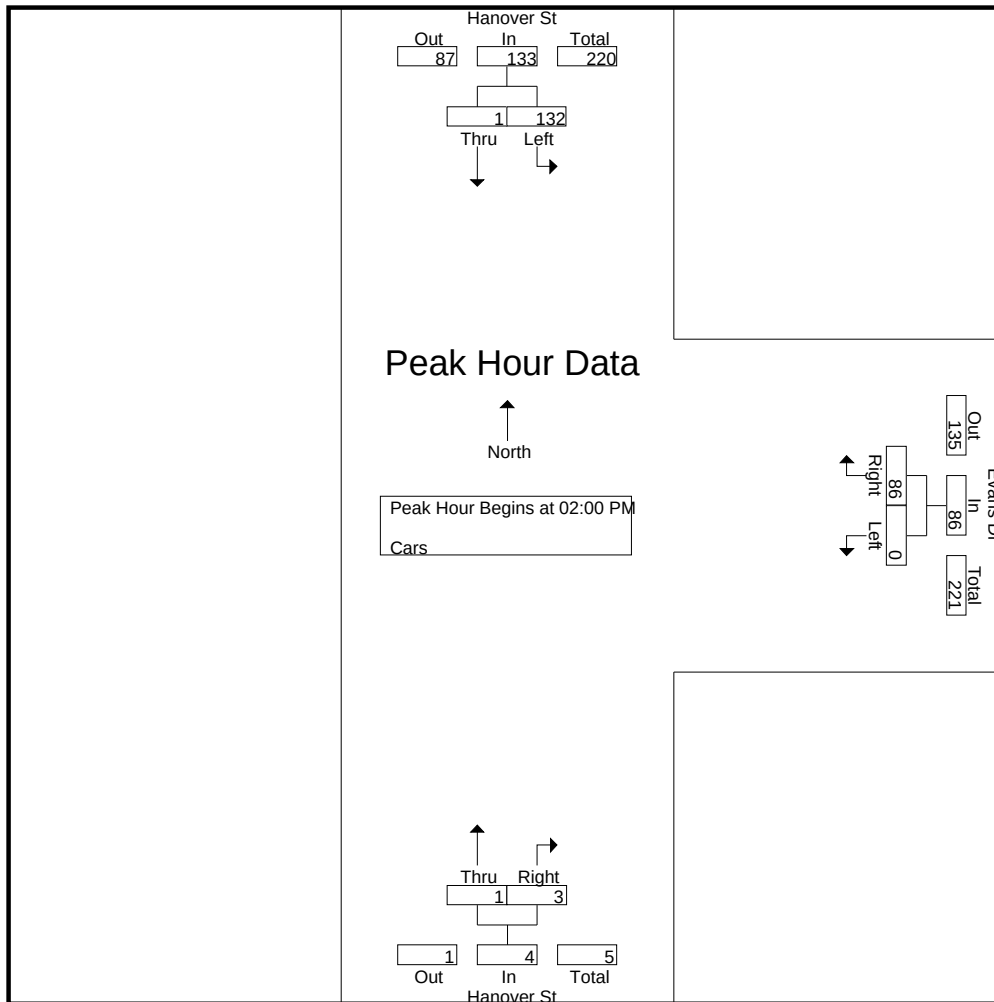
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	46	1	47	0	22	22	1	1	2	71
02:15 PM	26	0	26	0	19	19	0	2	2	47
02:30 PM	30	0	30	0	22	22	0	0	0	52
02:45 PM	30	0	30	0	23	23	0	0	0	53
Total Volume	132	1	133	0	86	86	1	3	4	223
% App. Total	99.2	0.8		0	100		25	75		
PHF	.717	.250	.707	.000	.935	.935	.250	.375	.500	.785

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 5

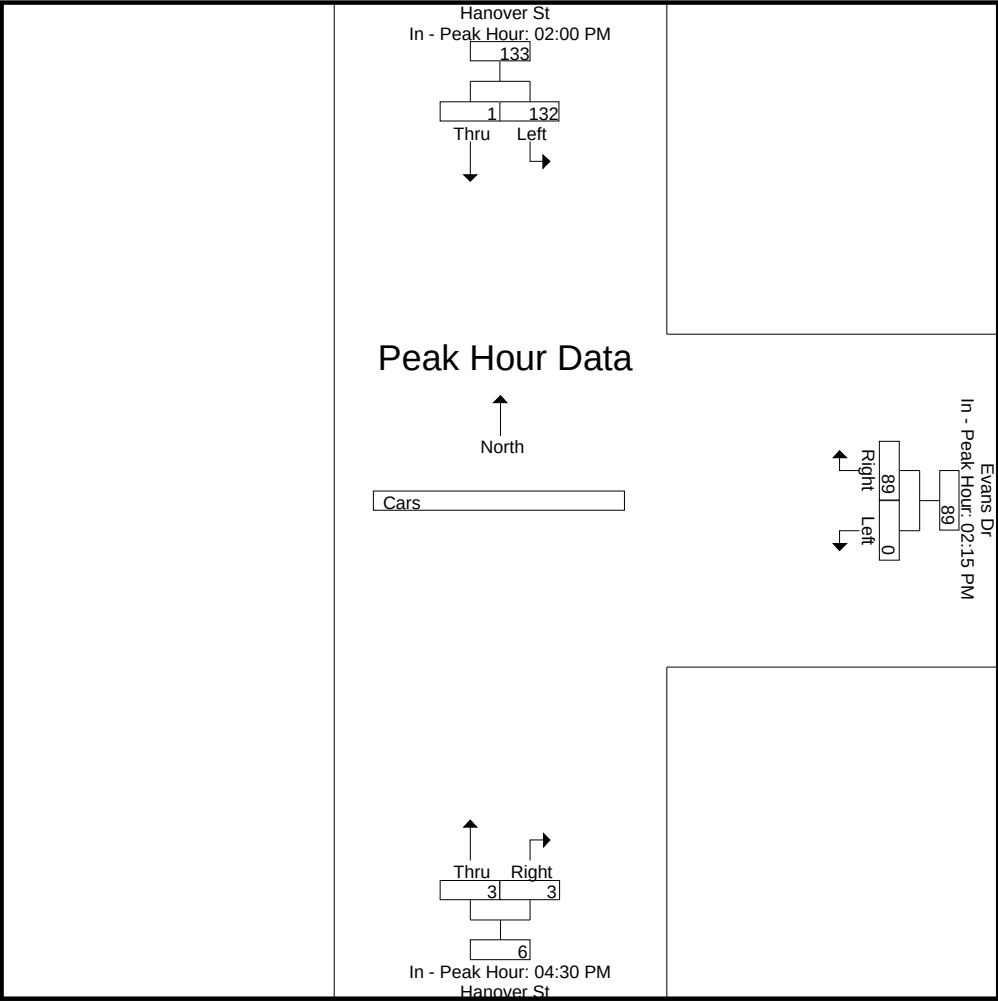


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	02:00 PM			02:15 PM			04:30 PM		
+0 mins.	46	1	47	0	19	19	1	2	3
+15 mins.	26	0	26	0	22	22	0	0	0
+30 mins.	30	0	30	0	23	23	0	1	1
+45 mins.	30	0	30	0	25	25	2	0	2
Total Volume	132	1	133	0	89	89	3	3	6
% App. Total	99.2	0.8		0	100		50	50	
PHF	.717	.250	.707	.000	.890	.890	.375	.375	.500

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 7

Groups Printed- Trucks

	Hanover St From North		Evans Dr From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
02:00 PM	0	0	0	0	0	0	0
02:15 PM	0	0	0	1	0	0	1
02:30 PM	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	1
03:00 PM	0	0	0	1	0	0	1
03:15 PM	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0
03:45 PM	0	0	0	1	0	0	1
Total	0	0	0	2	0	0	2
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	1	0	0	1
04:45 PM	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	1
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	0	0	4	0	0	4
Apprch %	0	0	0	100	0	0	
Total %	0	0	0	100	0	0	

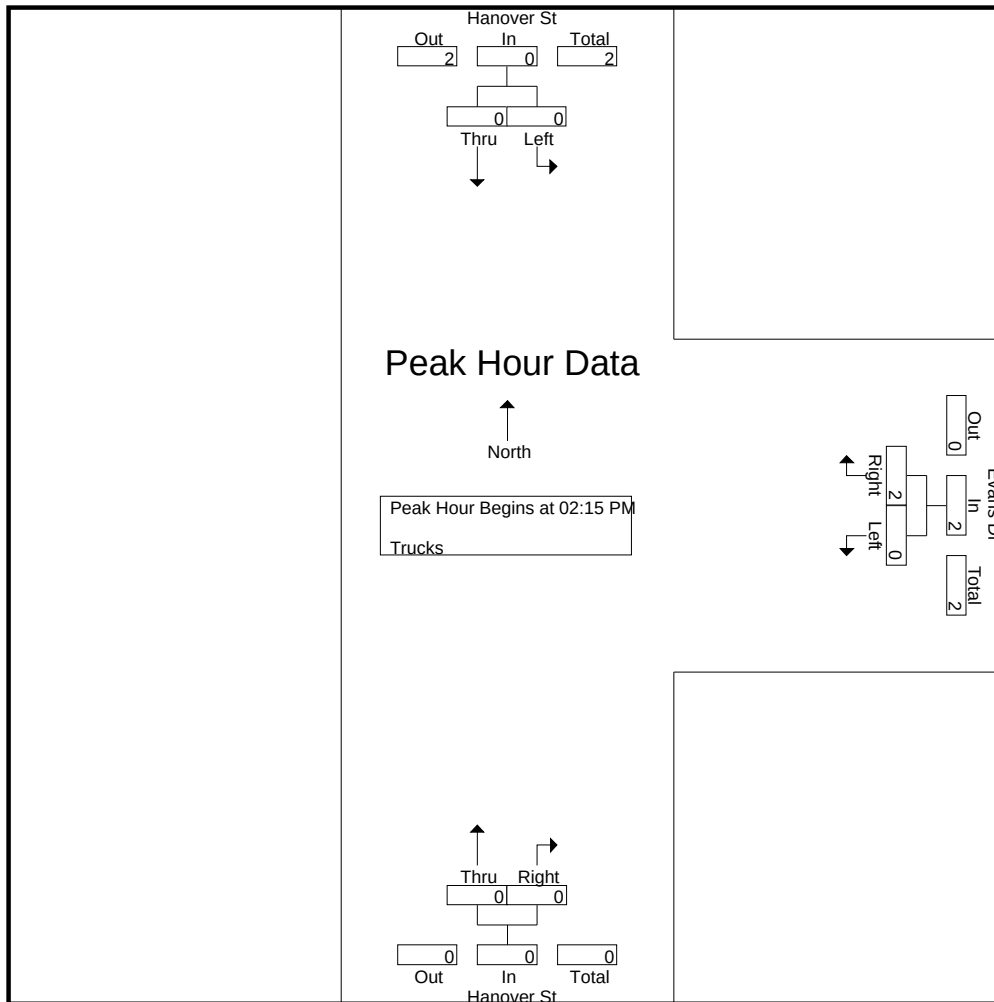
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:15 PM										
02:15 PM	0	0	0	0	1	1	0	0	0	1
02:30 PM	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	1	1	0	0	0	1
Total Volume	0	0	0	0	2	2	0	0	0	2
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.500	.500	.000	.000	.000	.500

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 8

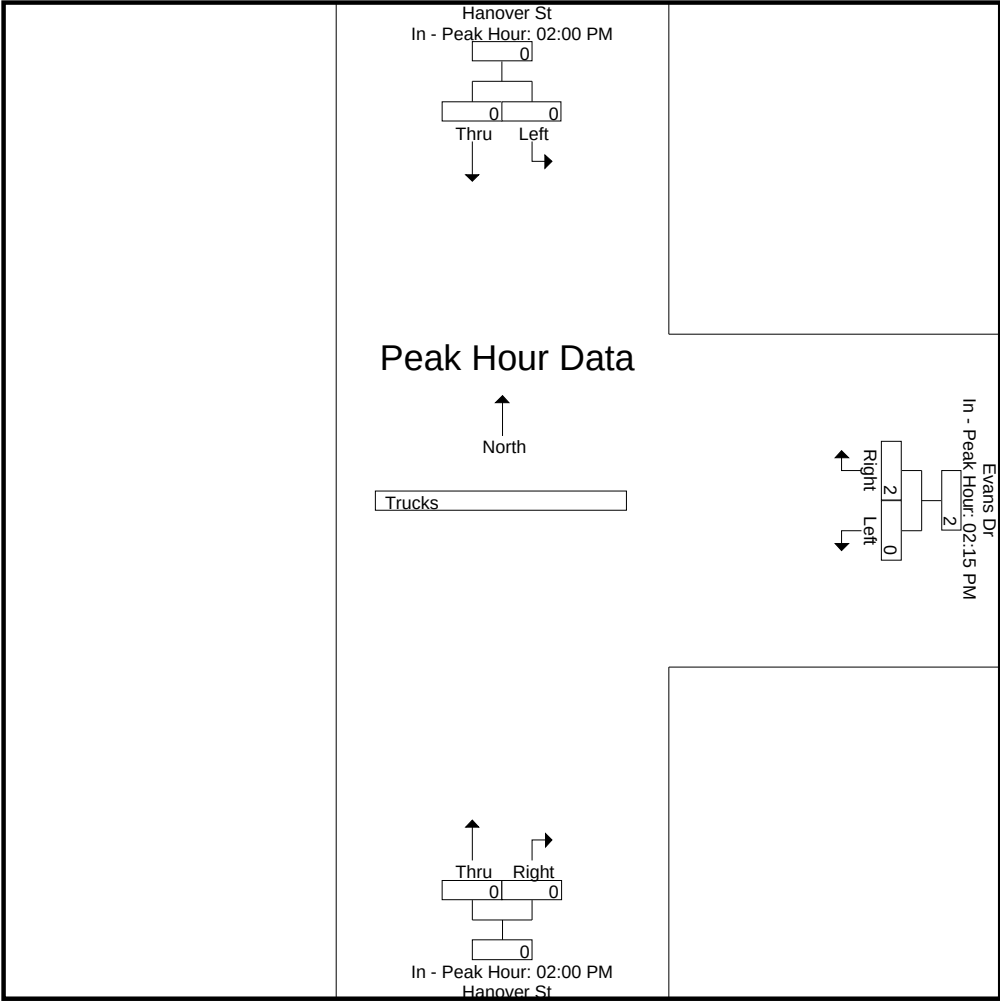


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	02:00 PM			02:15 PM			02:00 PM		
+0 mins.	0	0	0	0	1	1	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	1	1	0	0	0
Total Volume	0	0	0	0	2	2	0	0	0
% App. Total	0	0		0	100		0	0	
PHF	.000	.000	.000	.000	.500	.500	.000	.000	.000

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 10

Groups Printed- Bikes Peds

	Hanover St From North			Evans Dr From East			Hanover St From South			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
02:00 PM	0	1	0	0	0	17	0	0	0	17	1	18
02:15 PM	0	5	0	0	0	13	0	0	0	13	5	18
02:30 PM	0	3	0	0	0	16	0	0	0	16	3	19
02:45 PM	0	2	0	0	0	31	0	0	0	31	2	33
Total	0	11	0	0	0	77	0	0	0	77	11	88
03:00 PM	0	5	0	0	0	39	0	0	0	39	5	44
03:15 PM	0	0	0	0	0	6	0	0	0	6	0	6
03:30 PM	0	0	0	0	0	4	1	0	0	4	1	5
03:45 PM	0	1	0	0	0	3	0	0	0	3	1	4
Total	0	6	0	0	0	52	1	0	0	52	7	59
04:00 PM	0	1	0	0	0	8	1	0	0	8	2	10
04:15 PM	0	0	0	0	0	2	0	0	1	3	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	1	0	0	0	11	1	0	1	12	2	14
05:00 PM	0	0	0	0	0	1	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	1	0	0	0	1	0	1
05:30 PM	0	2	0	0	0	1	0	0	0	1	2	3
05:45 PM	0	1	0	0	0	0	0	0	0	0	1	1
Total	0	3	0	0	0	3	0	0	0	3	3	6
Grand Total	0	21	0	0	0	143	2	0	1	144	23	167
Apprch %	0	100		0	0		100	0				
Total %	0	91.3		0	0		8.7	0		86.2	13.8	

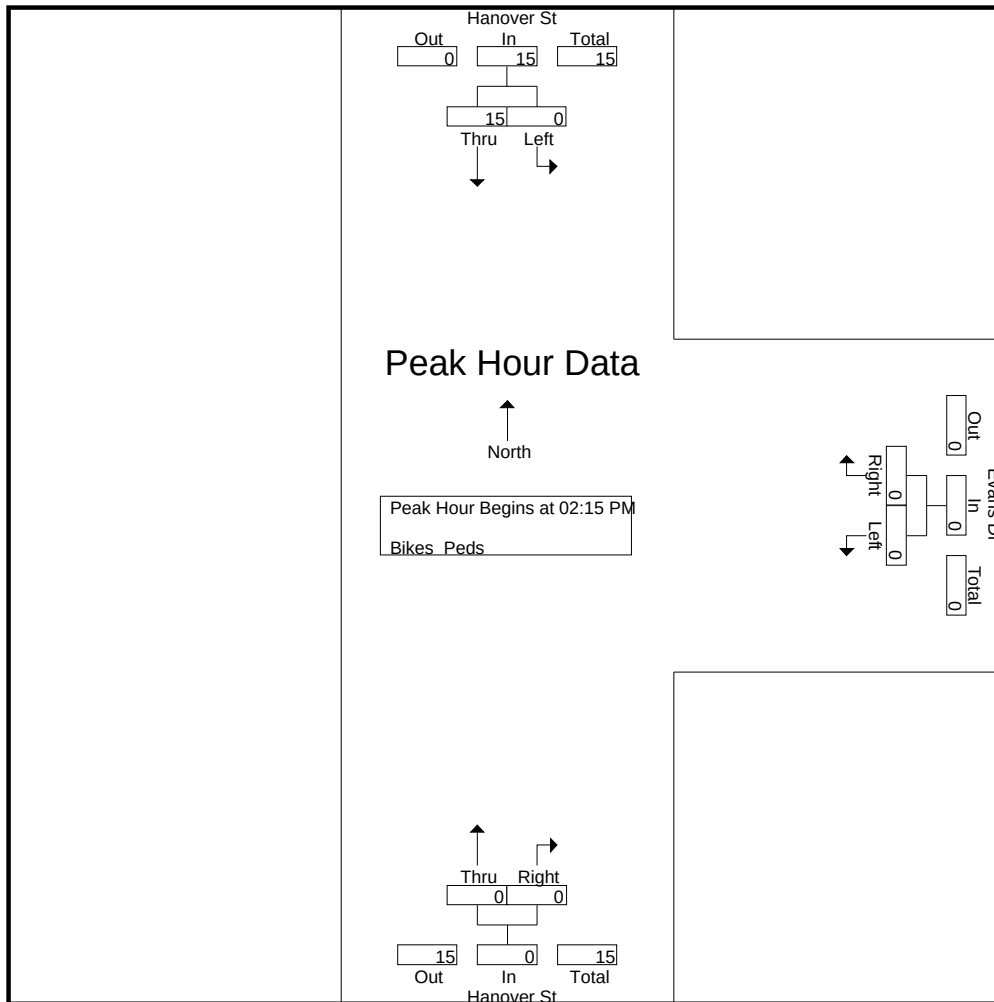
	Hanover St From North			Evans Dr From East			Hanover St From South			Int. Total
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:15 PM										
02:15 PM	0	5	5	0	0	0	0	0	0	5
02:30 PM	0	3	3	0	0	0	0	0	0	3
02:45 PM	0	2	2	0	0	0	0	0	0	2
03:00 PM	0	5	5	0	0	0	0	0	0	5
Total Volume	0	15	15	0	0	0	0	0	0	15
% App. Total	0	100		0	0		0	0		
PHF	.000	.750	.750	.000	.000	.000	.000	.000	.000	.750

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933001
 Site Code : 52933001
 Start Date : 11/10/2022
 Page No : 11

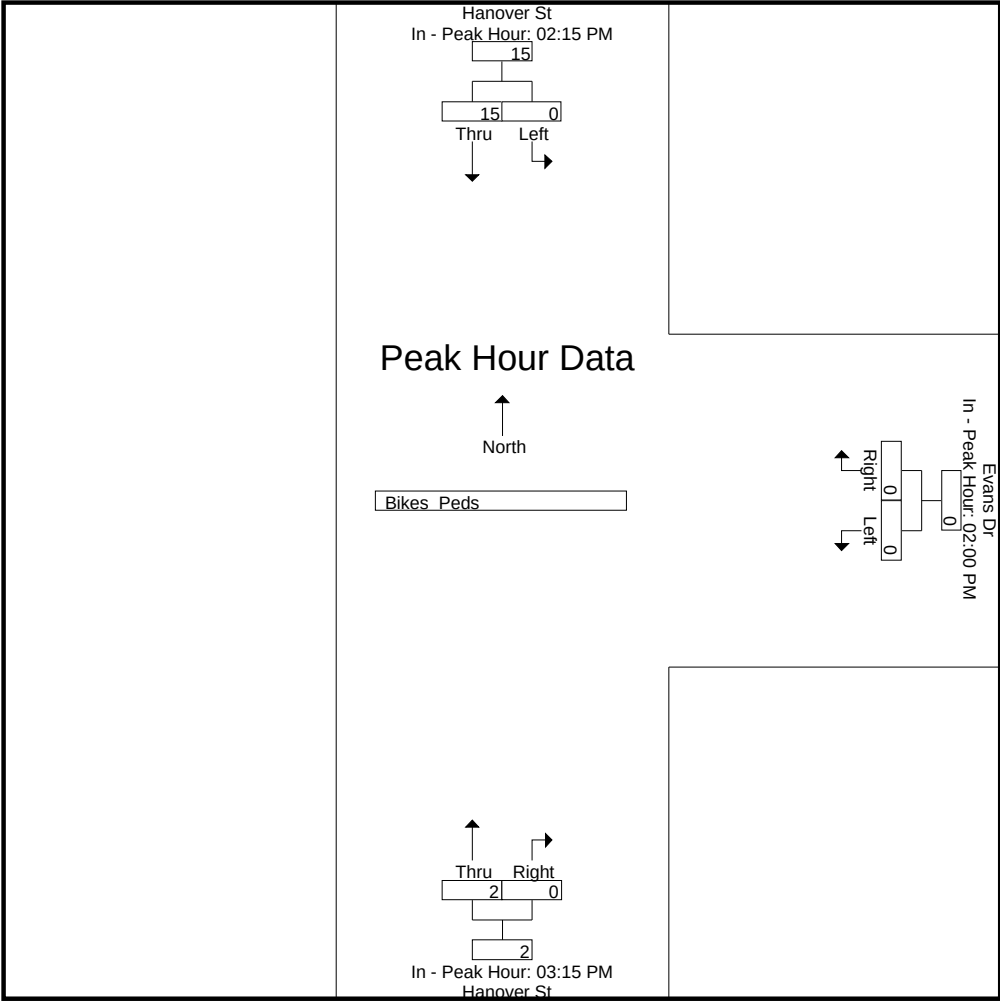


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	02:15 PM			02:00 PM			03:15 PM		
+0 mins.	0	5	5	0	0	0	0	0	0
+15 mins.	0	3	3	0	0	0	1	0	1
+30 mins.	0	2	2	0	0	0	0	0	0
+45 mins.	0	5	5	0	0	0	1	0	1
Total Volume	0	15	15	0	0	0	2	0	2
% App. Total	0	100		0	0		100	0	
PHF	.000	.750	.750	.000	.000	.000	.500	.000	.500

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933001
Site Code : 52933001
Start Date : 11/10/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S1
Site Code : 52933001
Start Date : 11/12/2022
Page No : 1

Groups Printed- Cars - Trucks

	Hanover St From North		Evans Dr From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	2	0	1	4	0	0	7
11:15 AM	3	1	0	9	0	1	14
11:30 AM	3	0	0	4	0	0	7
11:45 AM	7	0	0	6	0	0	13
Total	15	1	1	23	0	1	41
12:00 PM	4	0	0	5	0	0	9
12:15 PM	4	0	0	4	0	0	8
12:30 PM	2	0	0	7	0	0	9
12:45 PM	2	1	0	2	1	0	6
Total	12	1	0	18	1	0	32
Grand Total	27	2	1	41	1	1	73
Apprch %	93.1	6.9	2.4	97.6	50	50	
Total %	37	2.7	1.4	56.2	1.4	1.4	
Cars	27	2	1	41	1	1	73
% Cars	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0

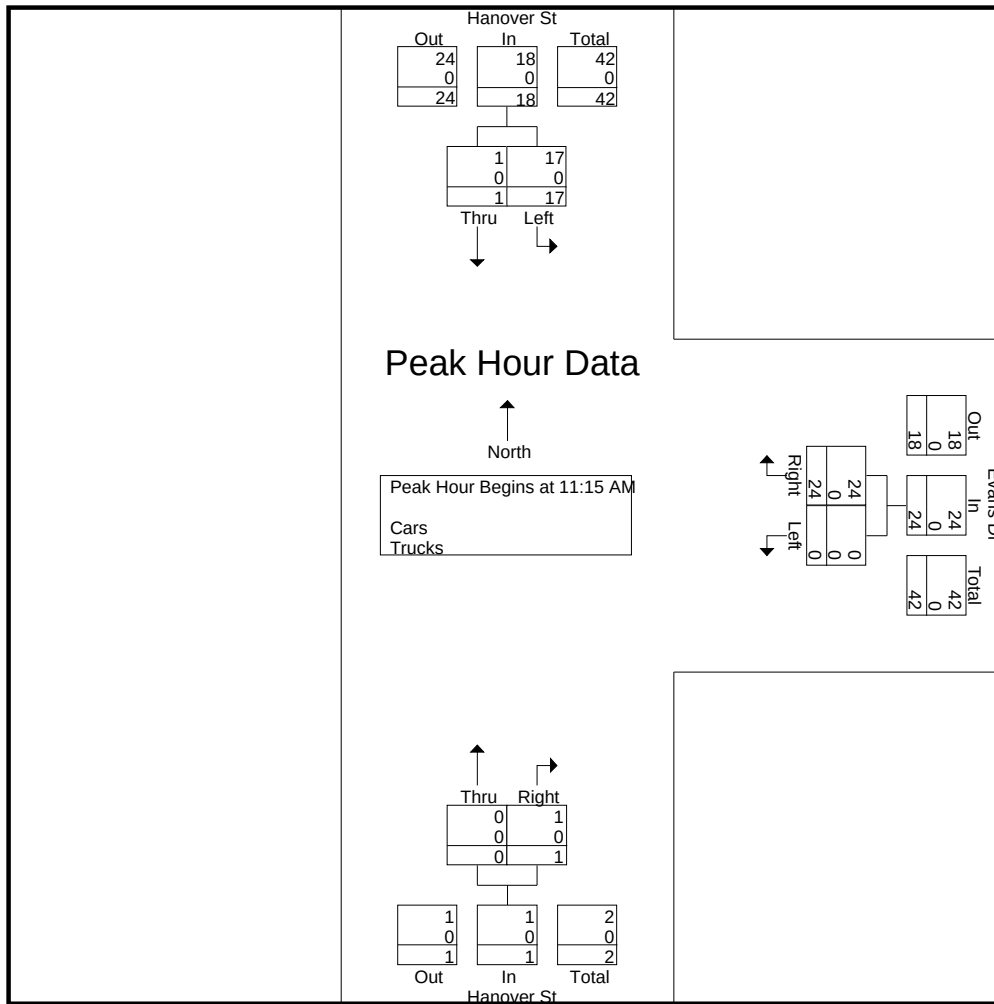
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	3	1	4	0	9	9	0	1	1	14
11:30 AM	3	0	3	0	4	4	0	0	0	7
11:45 AM	7	0	7	0	6	6	0	0	0	13
12:00 PM	4	0	4	0	5	5	0	0	0	9
Total Volume	17	1	18	0	24	24	0	1	1	43
% App. Total	94.4	5.6		0	100		0	100		
PHF	.607	.250	.643	.000	.667	.667	.000	.250	.250	.768
Cars	17	1	18	0	24	24	0	1	1	43
% Cars	100	100	100	0	100	100	0	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S1
 Site Code : 52933001
 Start Date : 11/12/2022
 Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

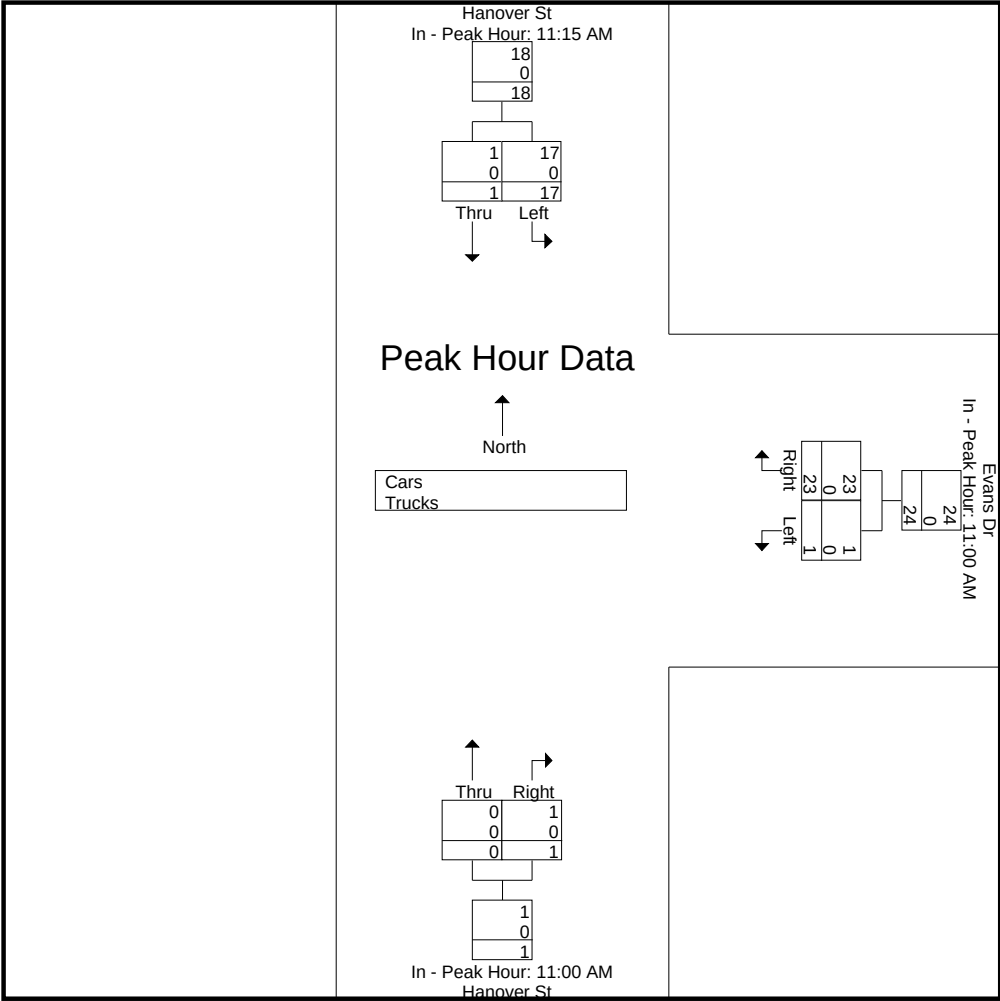
	11:15 AM			11:00 AM			11:00 AM		
+0 mins.	3	1	4	1	4	5	0	0	0
+15 mins.	3	0	3	0	9	9	0	1	1
+30 mins.	7	0	7	0	4	4	0	0	0
+45 mins.	4	0	4	0	6	6	0	0	0
Total Volume	17	1	18	1	23	24	0	1	1
% App. Total	94.4	5.6		4.2	95.8		0	100	
PHF	.607	.250	.643	.250	.639	.667	.000	.250	.250
Cars	17	1	18	1	23	24	0	1	1
% Cars	100	100	100	100	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S1
 Site Code : 52933001
 Start Date : 11/12/2022
 Page No : 3



Accurate Counts
978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S1
Site Code : 52933001
Start Date : 11/12/2022
Page No : 4

Groups Printed- Cars

	Hanover St From North		Evans Dr From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	2	0	1	4	0	0	7
11:15 AM	3	1	0	9	0	1	14
11:30 AM	3	0	0	4	0	0	7
11:45 AM	7	0	0	6	0	0	13
Total	15	1	1	23	0	1	41
12:00 PM	4	0	0	5	0	0	9
12:15 PM	4	0	0	4	0	0	8
12:30 PM	2	0	0	7	0	0	9
12:45 PM	2	1	0	2	1	0	6
Total	12	1	0	18	1	0	32
Grand Total	27	2	1	41	1	1	73
Apprch %	93.1	6.9	2.4	97.6	50	50	
Total %	37	2.7	1.4	56.2	1.4	1.4	

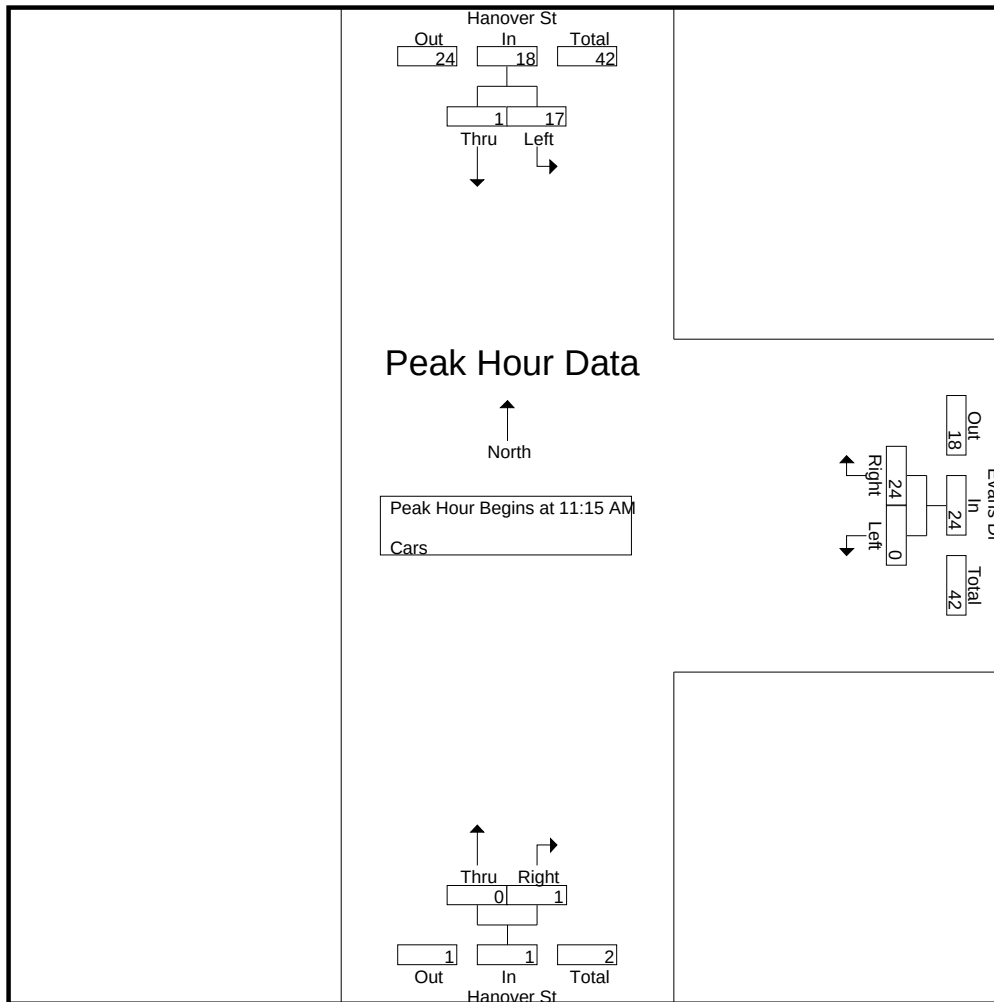
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	3	1	4	0	9	9	0	1	1	14
11:30 AM	3	0	3	0	4	4	0	0	0	7
11:45 AM	7	0	7	0	6	6	0	0	0	13
12:00 PM	4	0	4	0	5	5	0	0	0	9
Total Volume	17	1	18	0	24	24	0	1	1	43
% App. Total	94.4	5.6		0	100		0	100		
PHF	.607	.250	.643	.000	.667	.667	.000	.250	.250	.768

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S1
 Site Code : 52933001
 Start Date : 11/12/2022
 Page No : 5



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

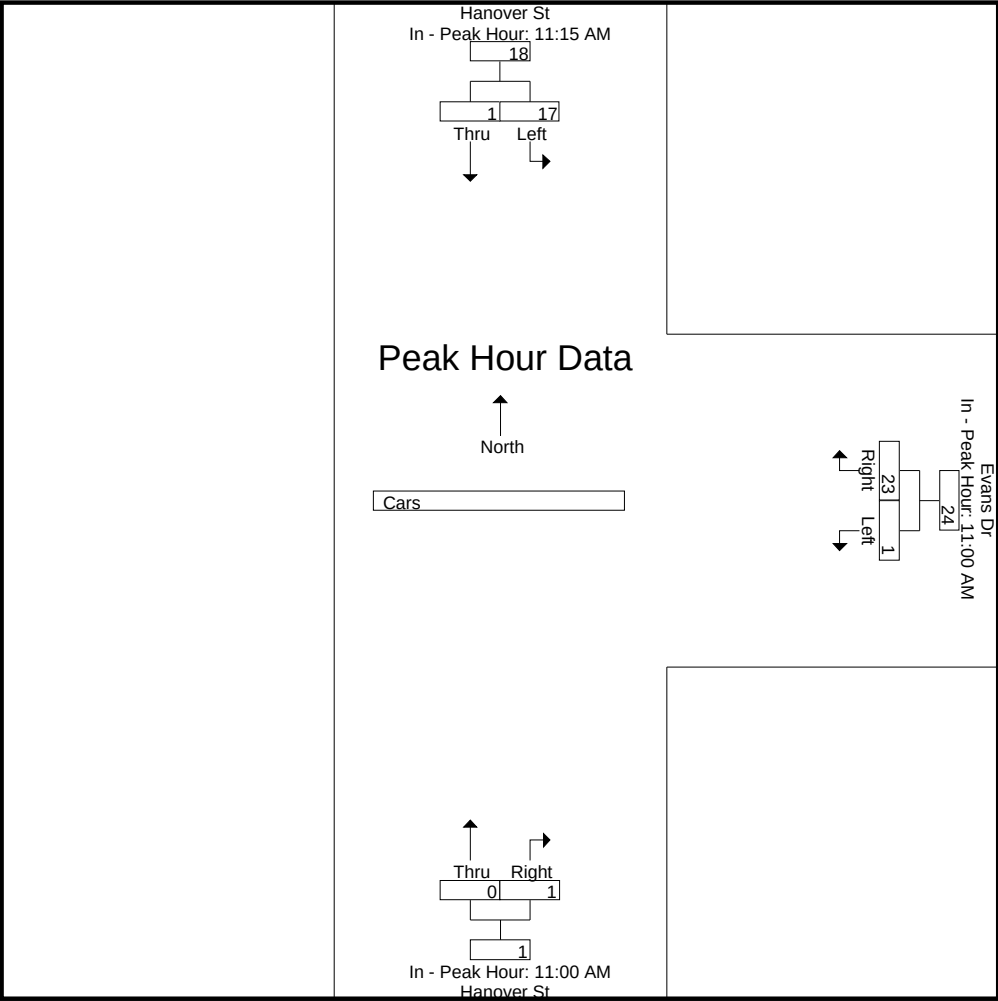
	11:15 AM			11:00 AM			11:00 AM		
+0 mins.	3	1	4	1	4	5	0	0	0
+15 mins.	3	0	3	0	9	9	0	1	1
+30 mins.	7	0	7	0	4	4	0	0	0
+45 mins.	4	0	4	0	6	6	0	0	0
Total Volume	17	1	18	1	23	24	0	1	1
% App. Total	94.4	5.6		4.2	95.8		0	100	
PHF	.607	.250	.643	.250	.639	.667	.000	.250	.250

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S1
 Site Code : 52933001
 Start Date : 11/12/2022
 Page No : 6



Accurate Counts
978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S1
Site Code : 52933001
Start Date : 11/12/2022
Page No : 7

Groups Printed- Trucks

	Hanover St From North		Evans Dr From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	
Total %							

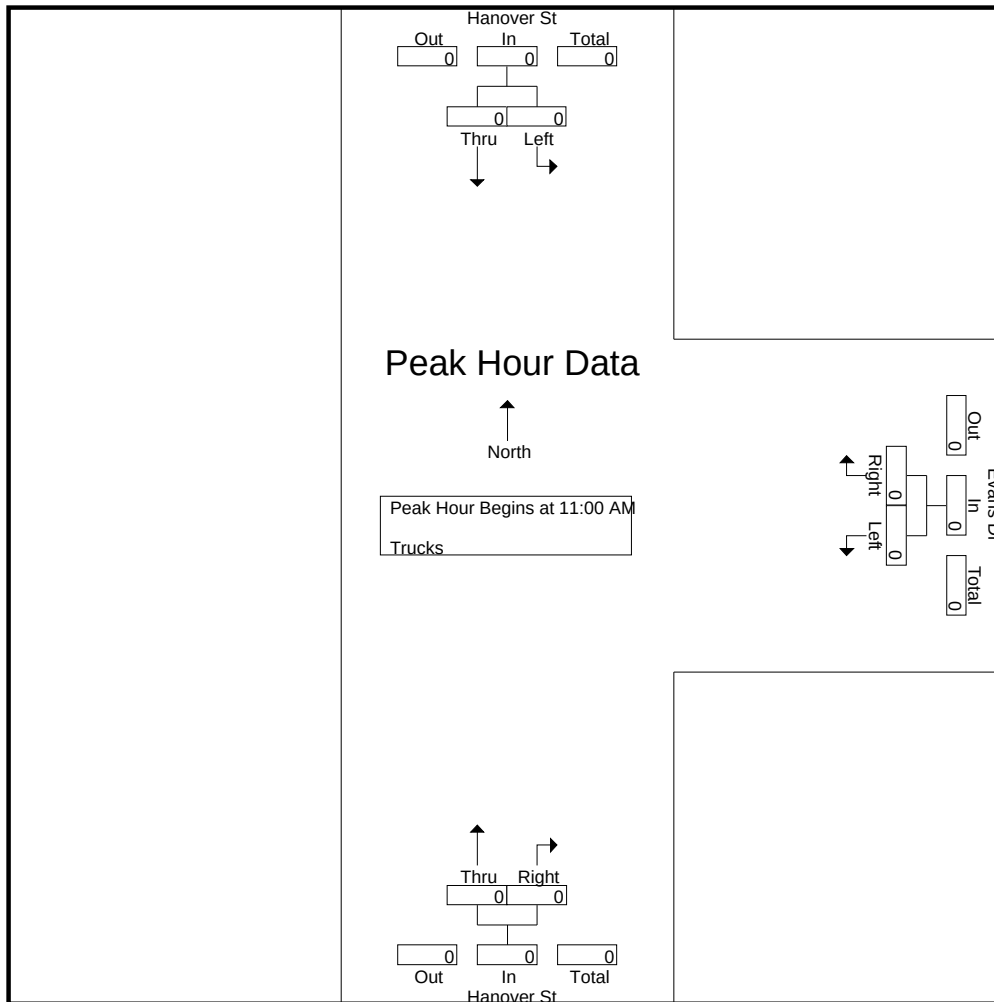
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S1
 Site Code : 52933001
 Start Date : 11/12/2022
 Page No : 8

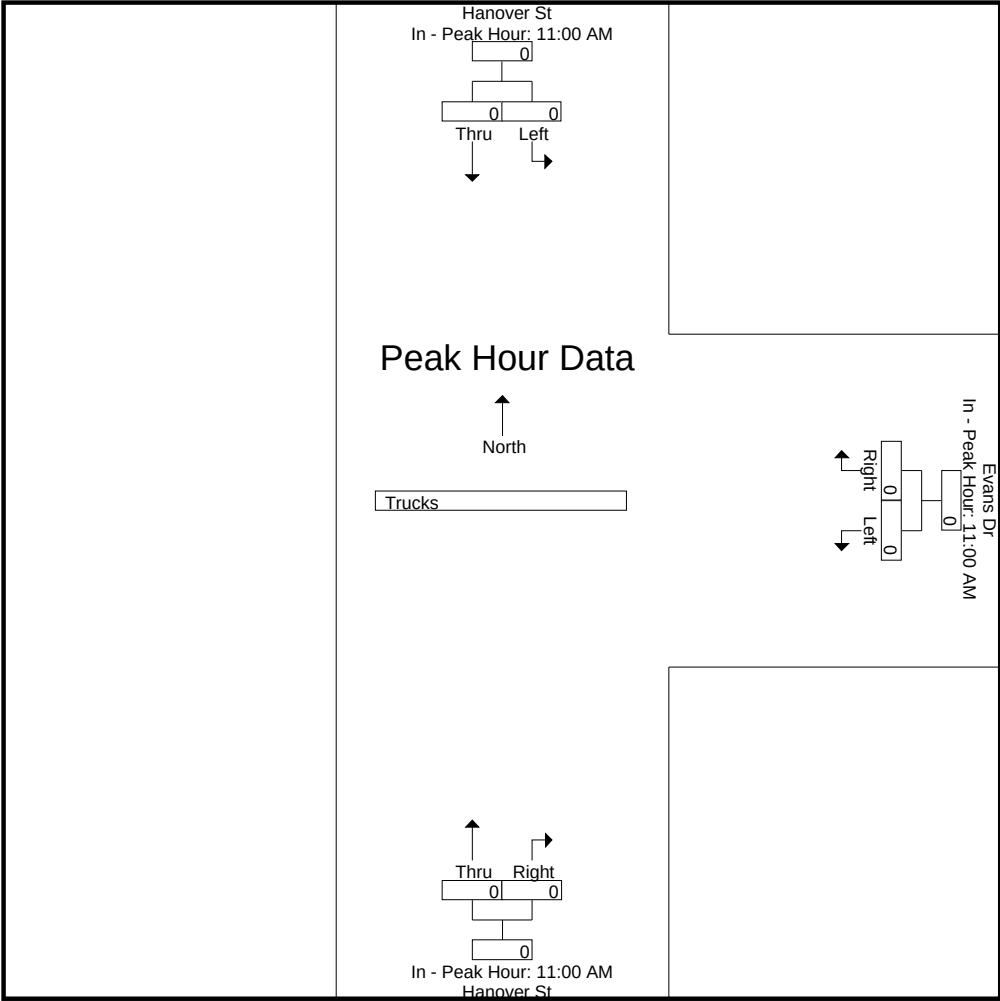


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S1
Site Code : 52933001
Start Date : 11/12/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S1
Site Code : 52933001
Start Date : 11/12/2022
Page No : 10

Groups Printed- Bikes Peds

	Hanover St From North			Evans Dr From East			Hanover St From South			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
11:00 AM	0	2	0	0	0	2	0	0	0	2	2	4
11:15 AM	0	1	0	0	0	4	1	0	0	4	2	6
11:30 AM	0	0	0	0	0	2	0	0	0	2	0	2
11:45 AM	0	0	0	0	0	3	0	1	0	3	1	4
Total	0	3	0	0	0	11	1	1	0	11	5	16
12:00 PM	0	0	0	0	0	0	1	0	0	0	1	1
12:15 PM	0	1	0	0	0	0	2	0	0	0	3	3
12:30 PM	0	0	0	0	0	1	0	0	0	1	0	1
12:45 PM	0	0	0	0	0	1	1	0	0	1	1	2
Total	0	1	0	0	0	2	4	0	0	2	5	7
Grand Total	0	4	0	0	0	13	5	1	0	13	10	23
Apprch %	0	100		0	0		83.3	16.7				
Total %	0	40		0	0		50	10		56.5	43.5	

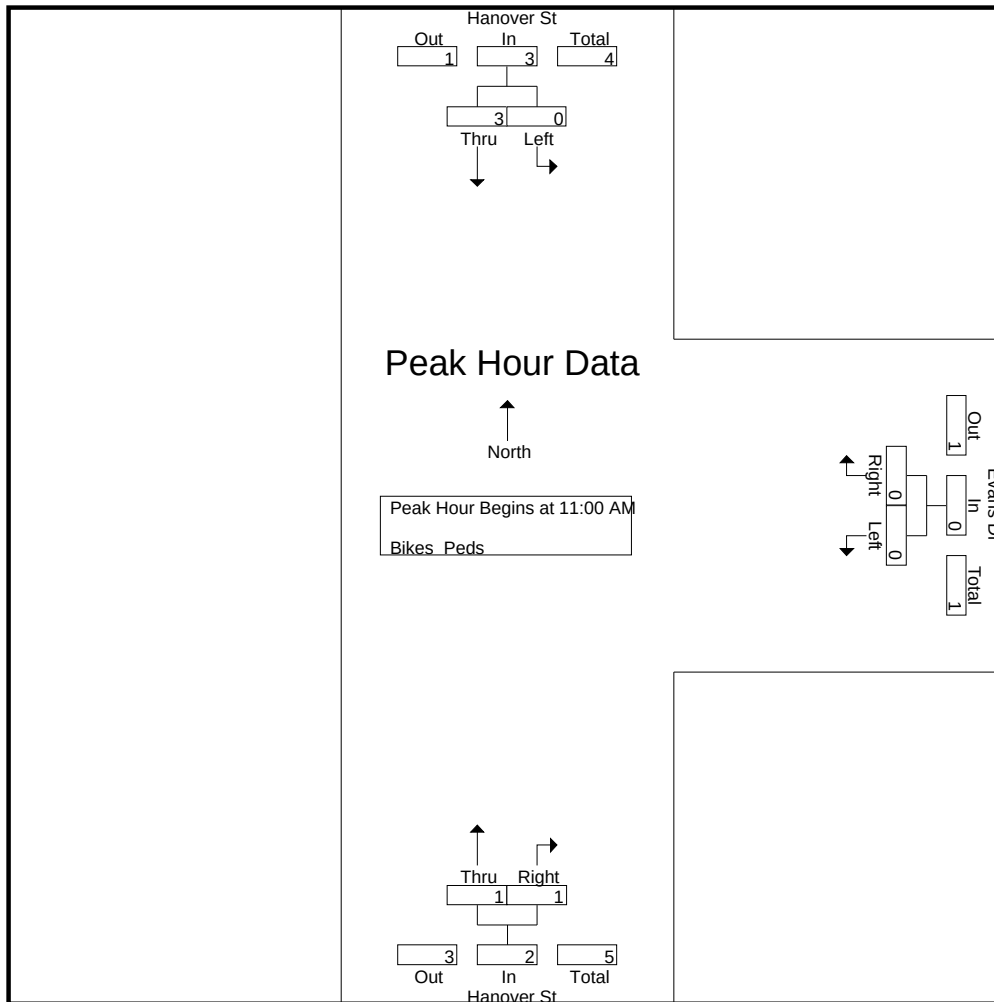
	Hanover St From North			Evans Dr From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	2	2	0	0	0	0	0	0	2
11:15 AM	0	1	1	0	0	0	1	0	1	2
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	1	1	1
Total Volume	0	3	3	0	0	0	1	1	2	5
% App. Total	0	100		0	0		50	50		
PHF	.000	.375	.375	.000	.000	.000	.250	.250	.500	.625

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S1
 Site Code : 52933001
 Start Date : 11/12/2022
 Page No : 11

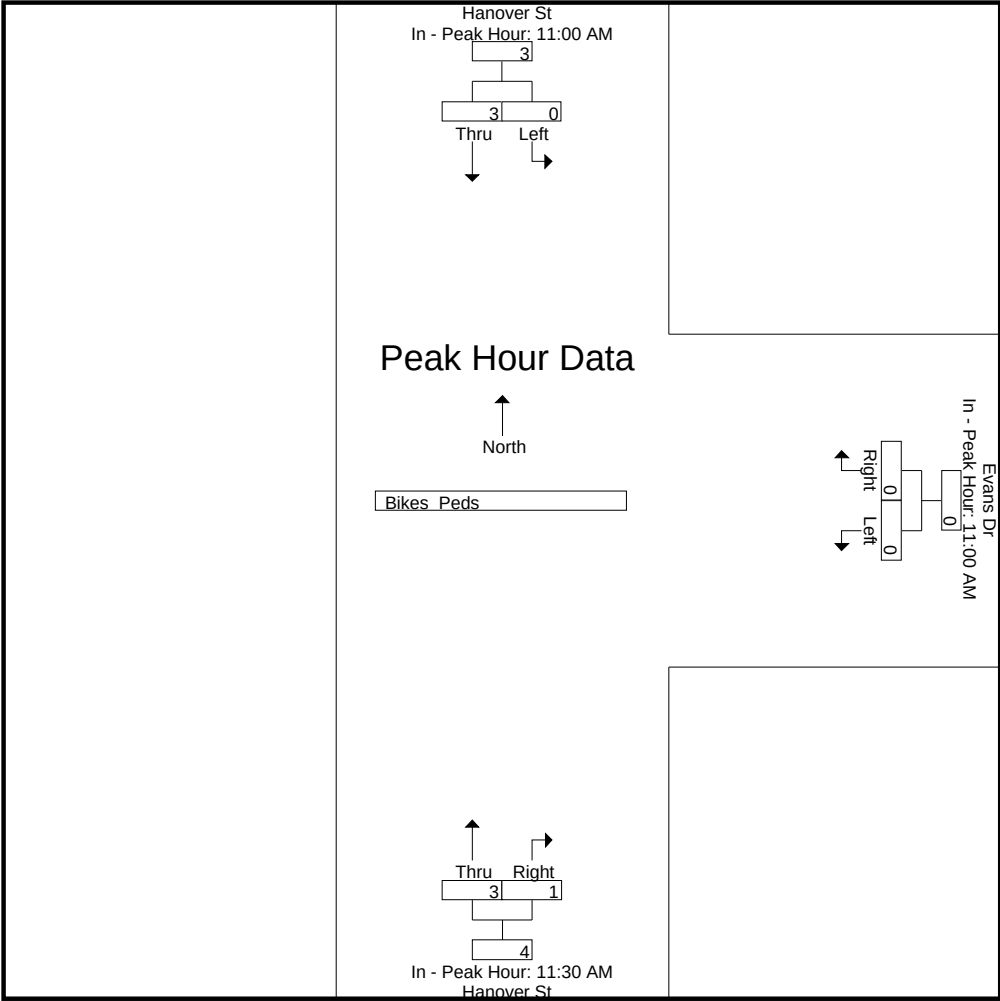


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:30 AM		
+0 mins.	0	2	2	0	0	0	0	0	0
+15 mins.	0	1	1	0	0	0	0	1	1
+30 mins.	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	2	0	2
Total Volume	0	3	3	0	0	0	3	1	4
% App. Total	0	100		0	0		75	25	
PHF	.000	.375	.375	.000	.000	.000	.375	.250	.500

N/S Street : Hanover Street
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S1
Site Code : 52933001
Start Date : 11/12/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

	Hanover St From North		Old Etna Rd From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	2	21	0	9	15	47
07:15 AM	0	5	39	0	13	40	97
07:30 AM	0	5	15	0	14	31	65
07:45 AM	1	3	28	0	12	33	77
Total	1	15	103	0	48	119	286
08:00 AM	0	6	7	0	13	22	48
08:15 AM	0	3	4	0	11	10	28
08:30 AM	0	4	1	0	4	4	13
08:45 AM	0	2	4	0	3	2	11
Total	0	15	16	0	31	38	100
Grand Total	1	30	119	0	79	157	386
Apprch %	3.2	96.8	100	0	33.5	66.5	
Total %	0.3	7.8	30.8	0	20.5	40.7	
Cars	1	29	118	0	76	152	376
% Cars	100	96.7	99.2	0	96.2	96.8	97.4
Trucks	0	1	1	0	3	5	10
% Trucks	0	3.3	0.8	0	3.8	3.2	2.6

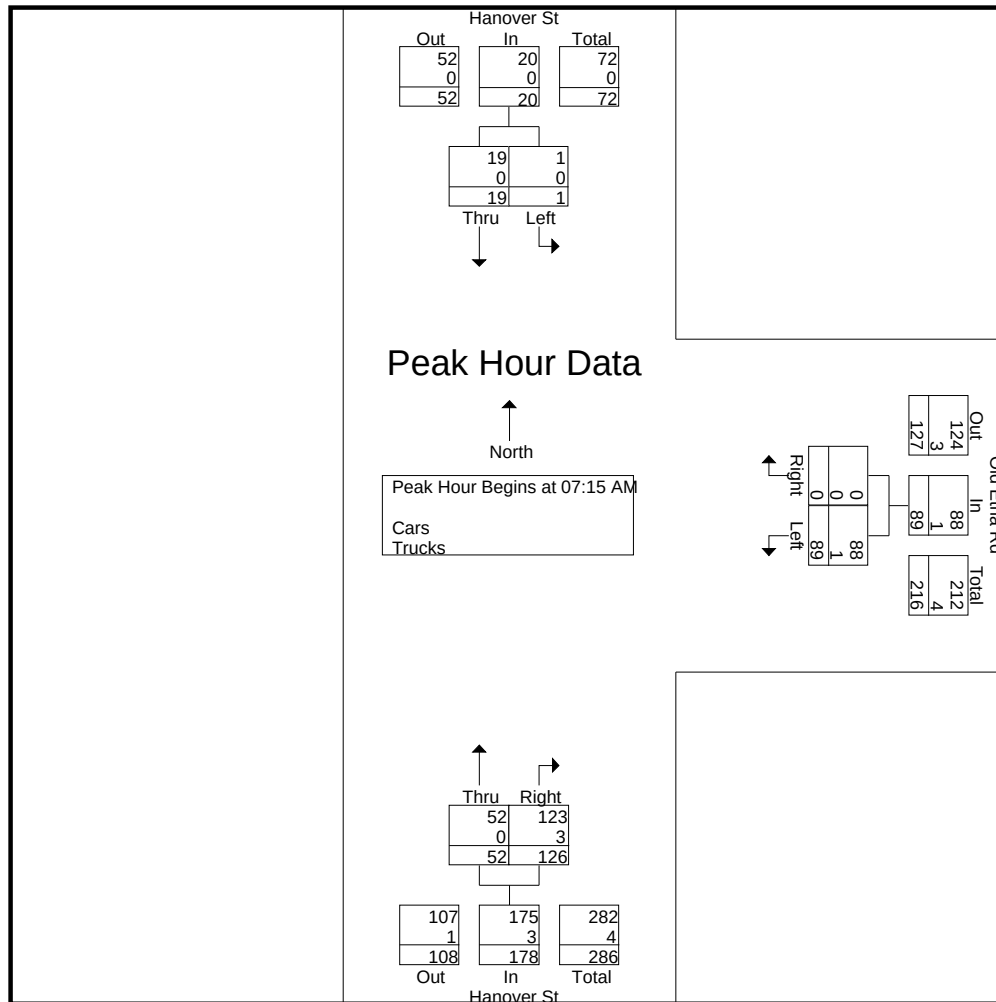
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	5	5	39	0	39	13	40	53	97
07:30 AM	0	5	5	15	0	15	14	31	45	65
07:45 AM	1	3	4	28	0	28	12	33	45	77
08:00 AM	0	6	6	7	0	7	13	22	35	48
Total Volume	1	19	20	89	0	89	52	126	178	287
% App. Total	5	95		100	0		29.2	70.8		
PHF	.250	.792	.833	.571	.000	.571	.929	.788	.840	.740
Cars	1	19	20	88	0	88	52	123	175	283
% Cars	100	100	100	98.9	0	98.9	100	97.6	98.3	98.6
Trucks	0	0	0	1	0	1	0	3	3	4
% Trucks	0	0	0	1.1	0	1.1	0	2.4	1.7	1.4

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

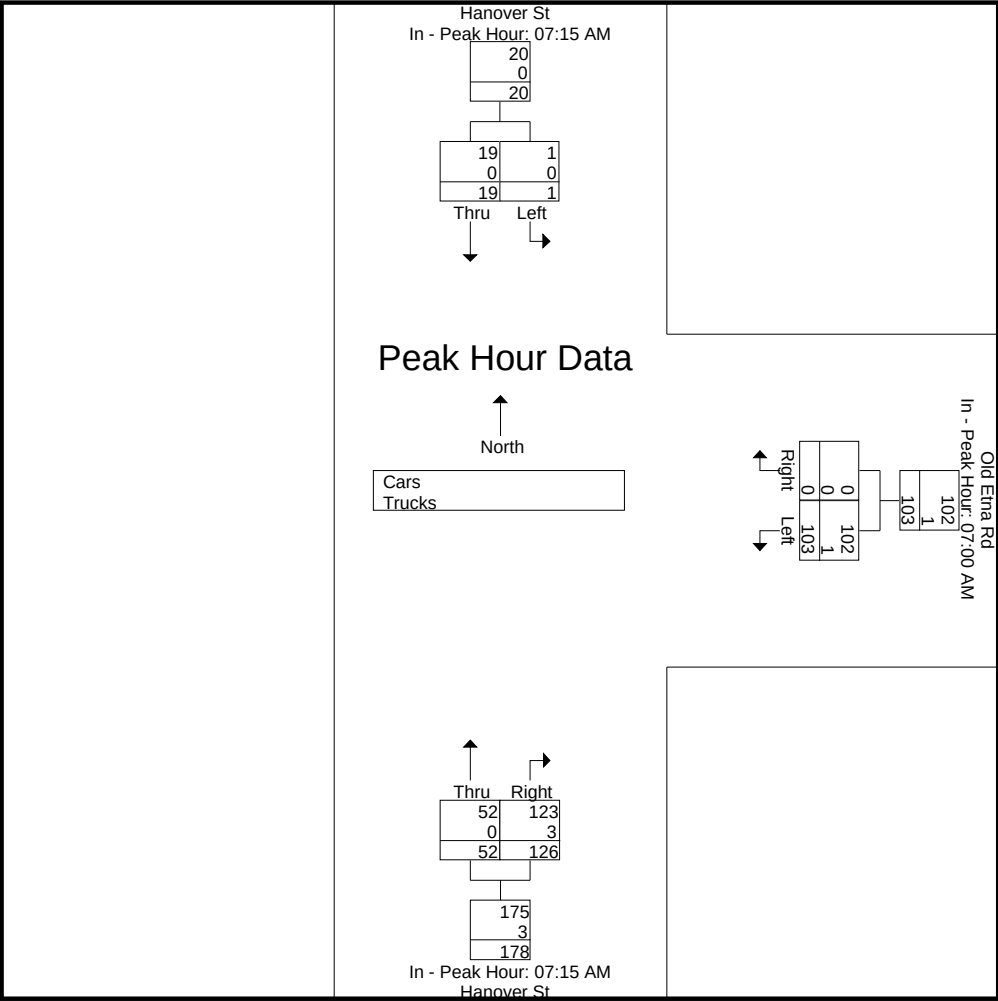
	07:15 AM			07:00 AM			07:15 AM		
+0 mins.	0	5	5	21	0	21	13	40	53
+15 mins.	0	5	5	39	0	39	14	31	45
+30 mins.	1	3	4	15	0	15	12	33	45
+45 mins.	0	6	6	28	0	28	13	22	35
Total Volume	1	19	20	103	0	103	52	126	178
% App. Total	5	95		100	0		29.2	70.8	
PHF	.250	.792	.833	.660	.000	.660	.929	.788	.840
Cars	1	19	20	102	0	102	52	123	175
% Cars	100	100	100	99	0	99	100	97.6	98.3
Trucks	0	0	0	1	0	1	0	3	3
% Trucks	0	0	0	1	0	1	0	2.4	1.7

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 3



Accurate Counts
978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 4

Groups Printed- Cars

	Hanover St From North		Old Etna Rd From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	1	21	0	8	13	43
07:15 AM	0	5	39	0	13	39	96
07:30 AM	0	5	15	0	14	31	65
07:45 AM	1	3	27	0	12	32	75
Total	1	14	102	0	47	115	279
08:00 AM	0	6	7	0	13	21	47
08:15 AM	0	3	4	0	10	10	27
08:30 AM	0	4	1	0	3	4	12
08:45 AM	0	2	4	0	3	2	11
Total	0	15	16	0	29	37	97
Grand Total	1	29	118	0	76	152	376
Apprch %	3.3	96.7	100	0	33.3	66.7	
Total %	0.3	7.7	31.4	0	20.2	40.4	

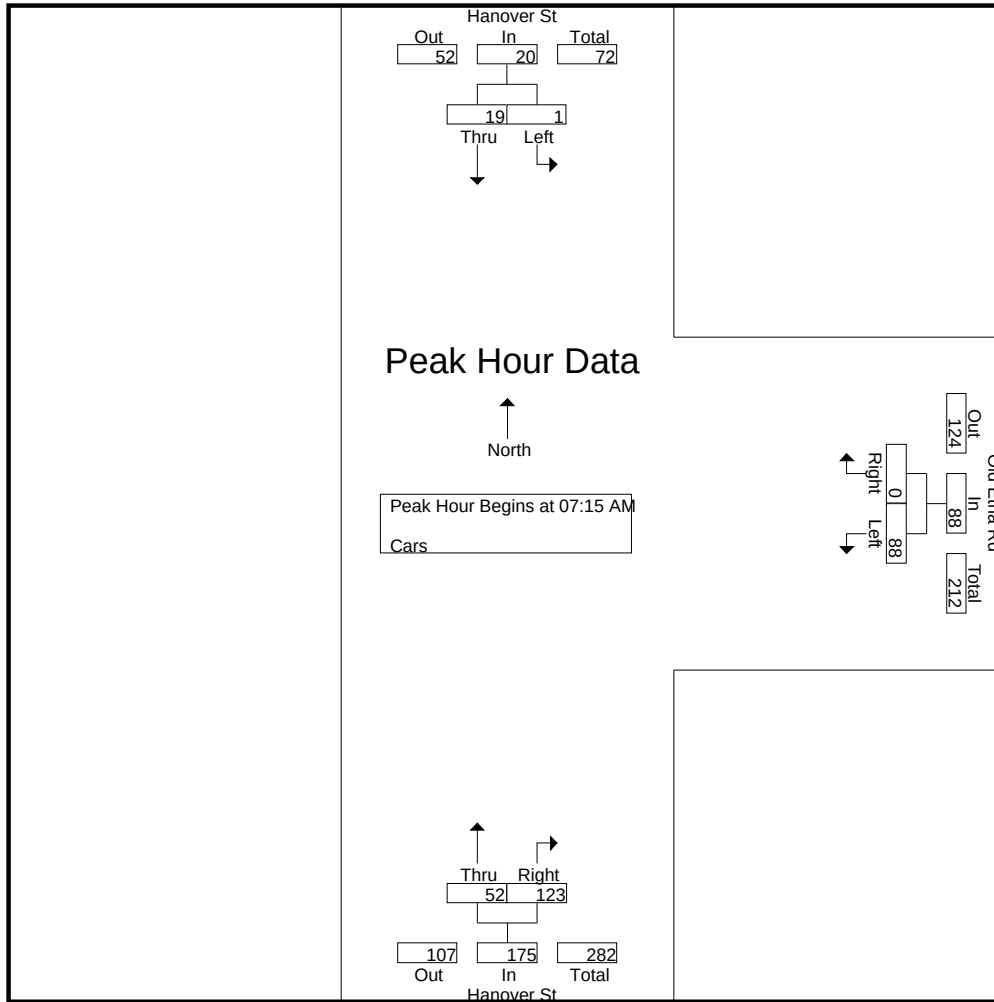
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	5	5	39	0	39	13	39	52	96
07:30 AM	0	5	5	15	0	15	14	31	45	65
07:45 AM	1	3	4	27	0	27	12	32	44	75
08:00 AM	0	6	6	7	0	7	13	21	34	47
Total Volume	1	19	20	88	0	88	52	123	175	283
% App. Total	5	95		100	0		29.7	70.3		
PHF	.250	.792	.833	.564	.000	.564	.929	.788	.841	.737

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 5

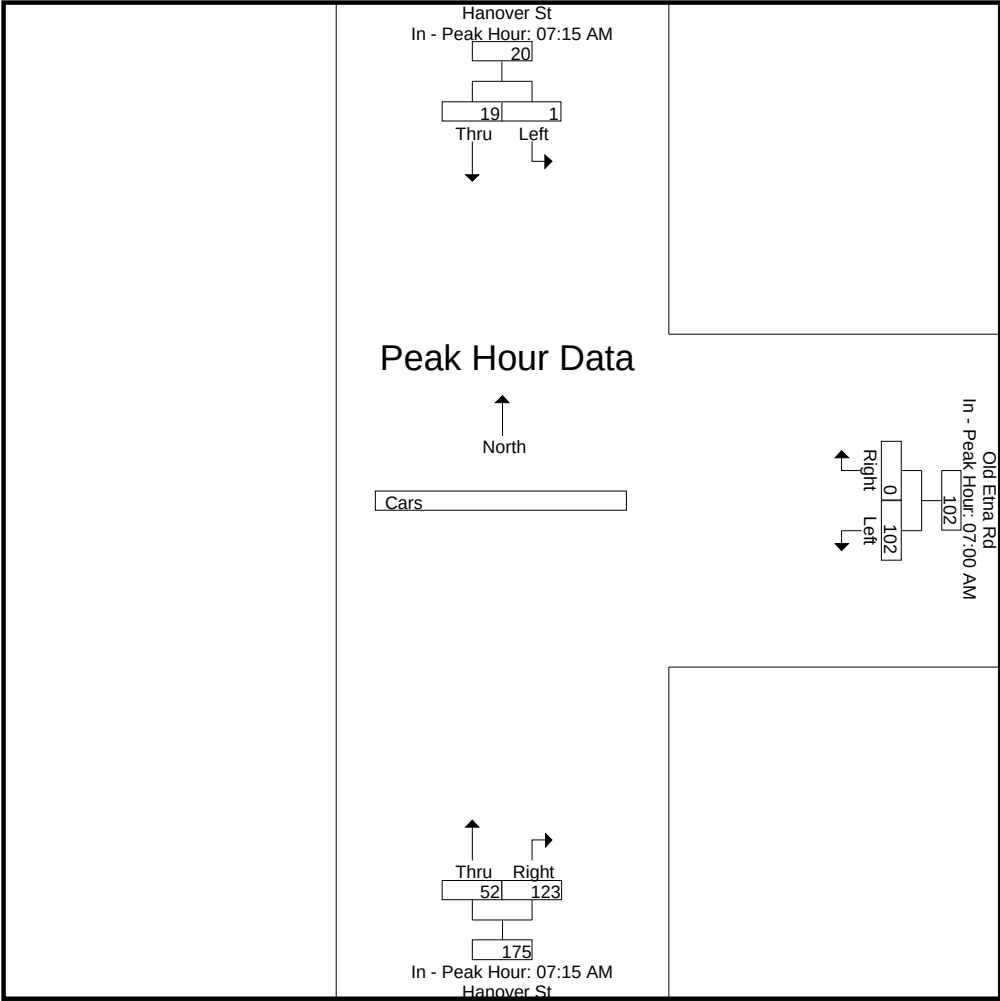


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:15 AM		
+0 mins.	0	5	5	21	0	21	13	39	52
+15 mins.	0	5	5	39	0	39	14	31	45
+30 mins.	1	3	4	15	0	15	12	32	44
+45 mins.	0	6	6	27	0	27	13	21	34
Total Volume	1	19	20	102	0	102	52	123	175
% App. Total	5	95		100	0		29.7	70.3	
PHF	.250	.792	.833	.654	.000	.654	.929	.788	.841

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 7

Groups Printed- Trucks

	Hanover St From North		Old Etna Rd From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	1	0	0	1	2	4
07:15 AM	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	1	0	0	1	2
Total	0	1	1	0	1	4	7
08:00 AM	0	0	0	0	0	1	1
08:15 AM	0	0	0	0	1	0	1
08:30 AM	0	0	0	0	1	0	1
08:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	2	1	3
Grand Total	0	1	1	0	3	5	10
Apprch %	0	100	100	0	37.5	62.5	
Total %	0	10	10	0	30	50	

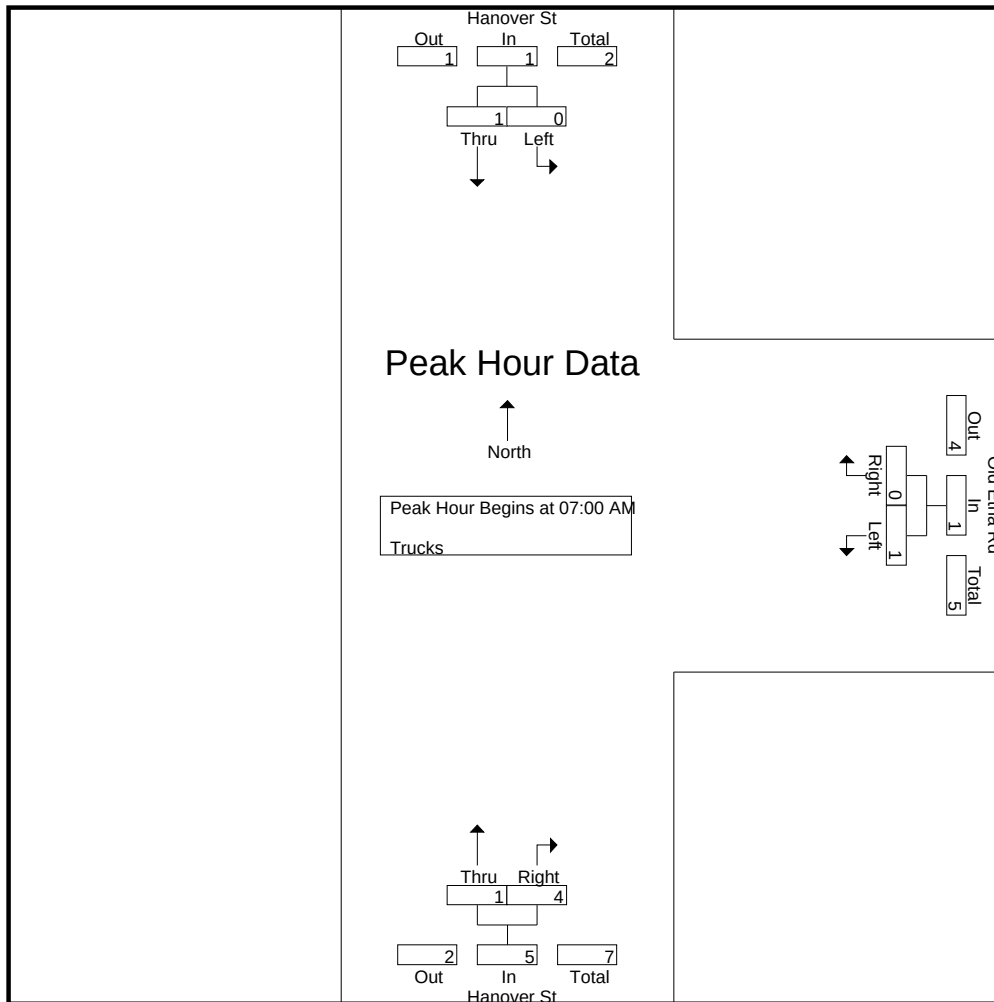
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	1	1	0	0	0	1	2	3	4
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	1	0	1	0	1	1	2
Total Volume	0	1	1	1	0	1	1	4	5	7
% App. Total	0	100		100	0		20	80		
PHF	.000	.250	.250	.250	.000	.250	.250	.500	.417	.438

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 8

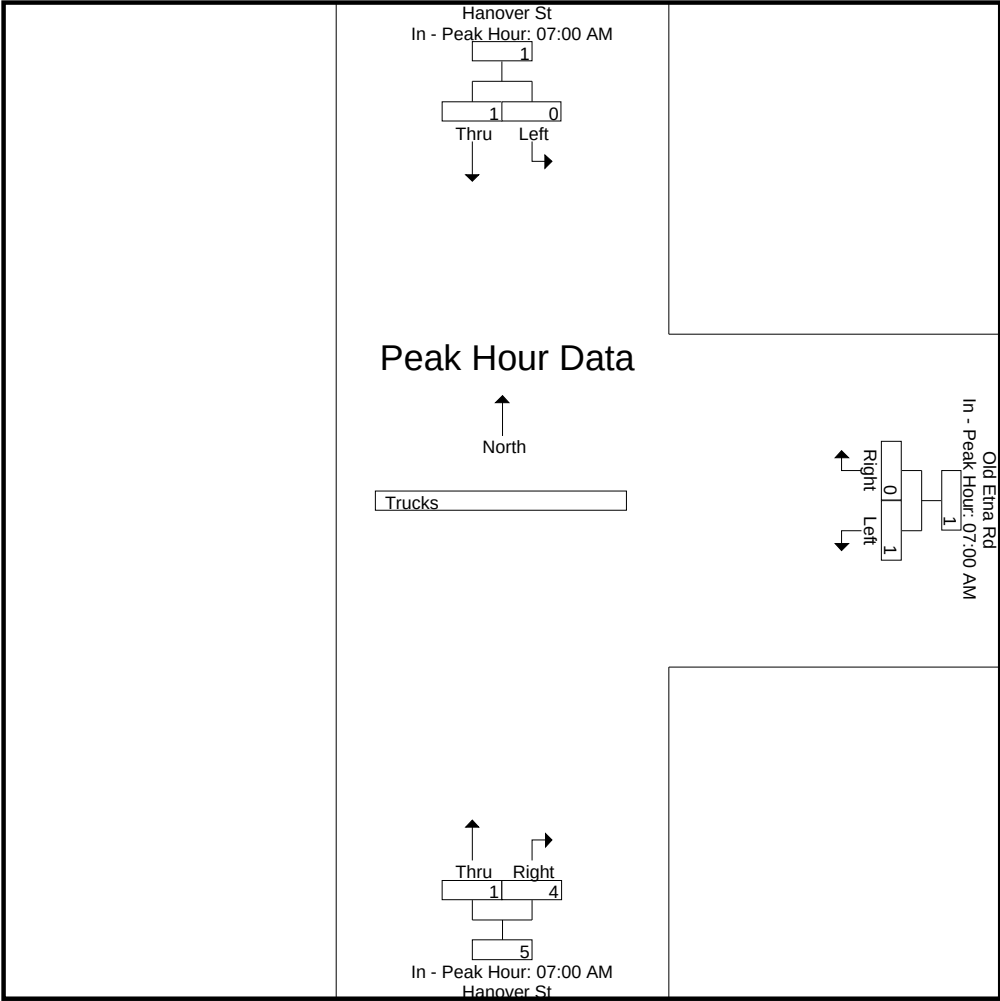


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	1	1	0	0	0	1	2	3
+15 mins.	0	0	0	0	0	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	1	0	1	0	1	1
Total Volume	0	1	1	1	0	1	1	4	5
% App. Total	0	100		100	0		20	80	
PHF	.000	.250	.250	.250	.000	.250	.250	.500	.417

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 10

Groups Printed- Bikes Peds

	Hanover St From North			Old Etna Rd From East			Hanover St From South			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	2	0	0	0	1	0	2	4	2	6
07:30 AM	0	0	0	1	0	0	0	0	0	0	1	1
07:45 AM	0	1	0	0	0	6	1	0	0	6	2	8
Total	0	2	2	1	0	6	2	0	2	10	5	15
08:00 AM	0	0	0	0	0	5	0	0	1	6	0	6
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	0	0	0	0	6	0	0	1	7	0	7
Grand Total	0	2	2	1	0	12	2	0	3	17	5	22
Apprch %	0	100		100	0		100	0				
Total %	0	40		20	0		40	0		77.3	22.7	

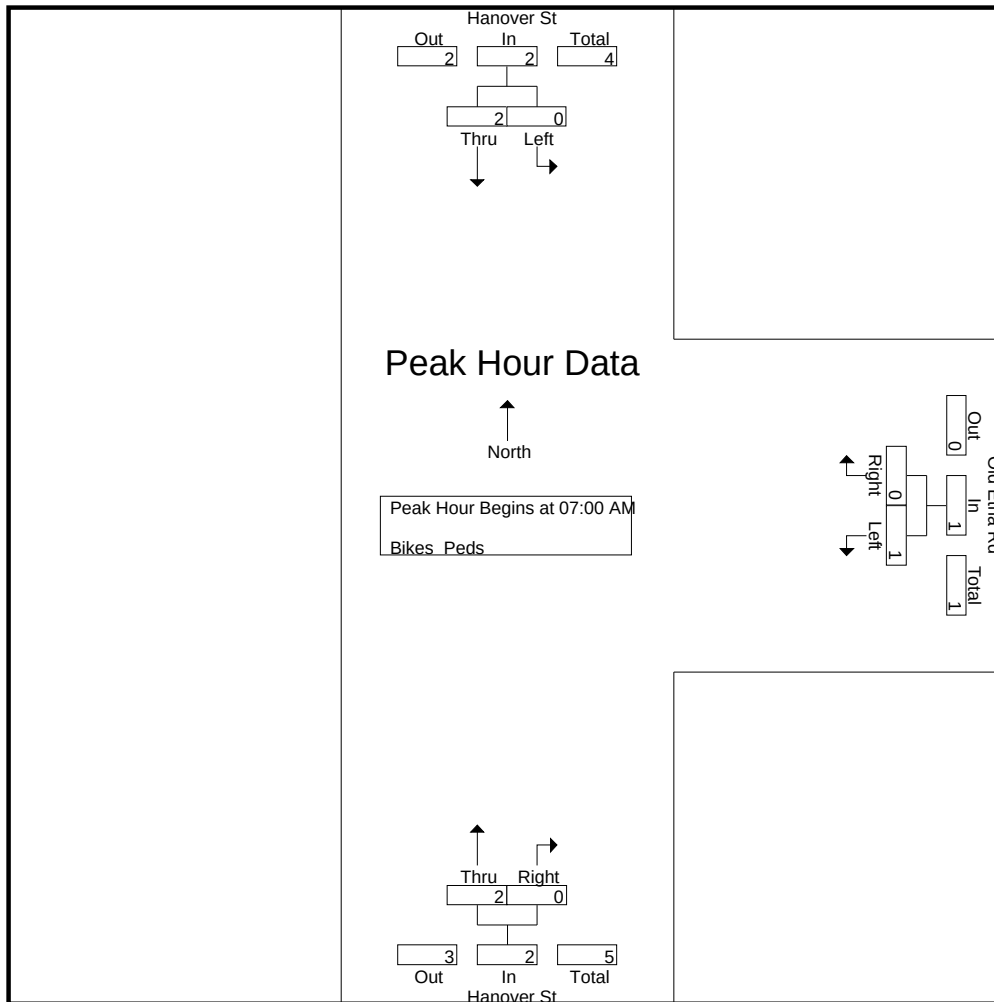
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	1	0	1	2
07:30 AM	0	0	0	1	0	1	0	0	0	1
07:45 AM	0	1	1	0	0	0	1	0	1	2
Total Volume	0	2	2	1	0	1	2	0	2	5
% App. Total	0	100		100	0		100	0		
PHF	.000	.500	.500	.250	.000	.250	.500	.000	.500	.625

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 11

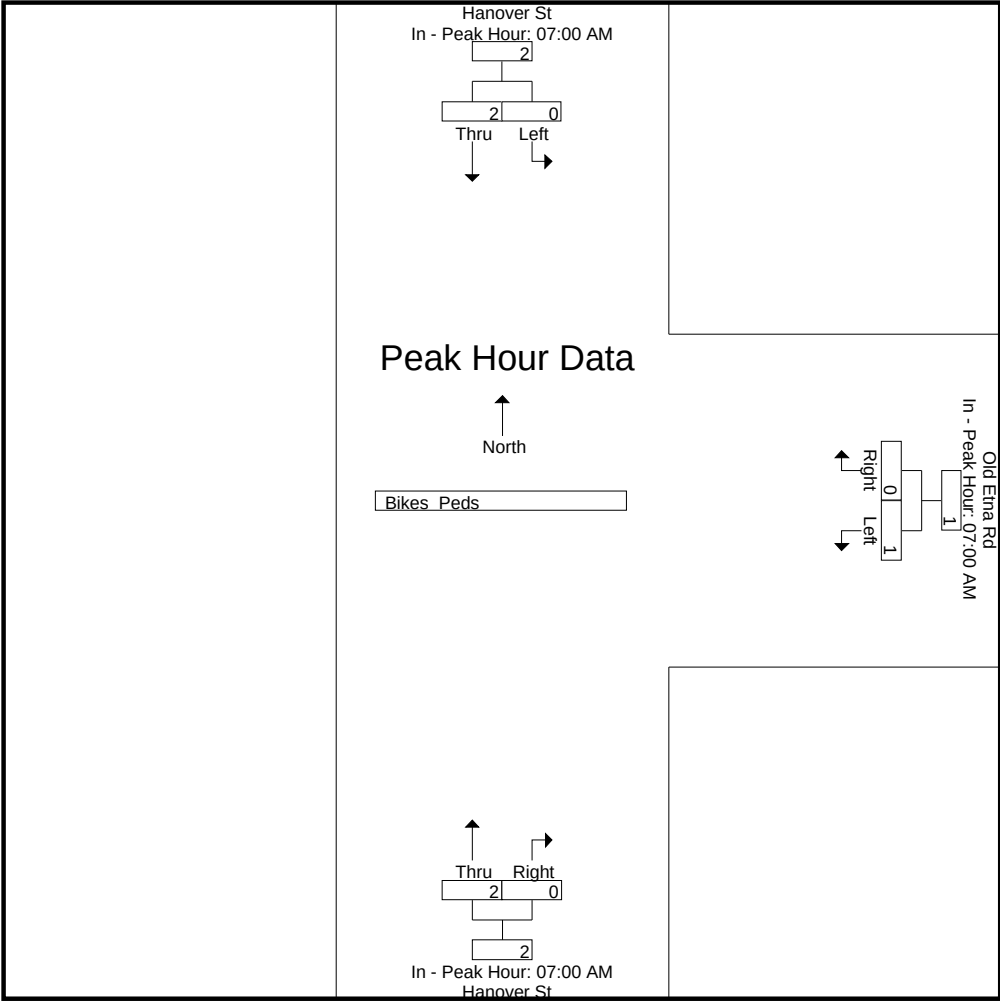


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	1	0	0	0	1	0	1
+30 mins.	0	0	0	1	0	1	0	0	0
+45 mins.	0	1	1	0	0	0	1	0	1
Total Volume	0	2	2	1	0	1	2	0	2
% App. Total	0	100		100	0		100	0	
PHF	.000	.500	.500	.250	.000	.250	.500	.000	.500

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

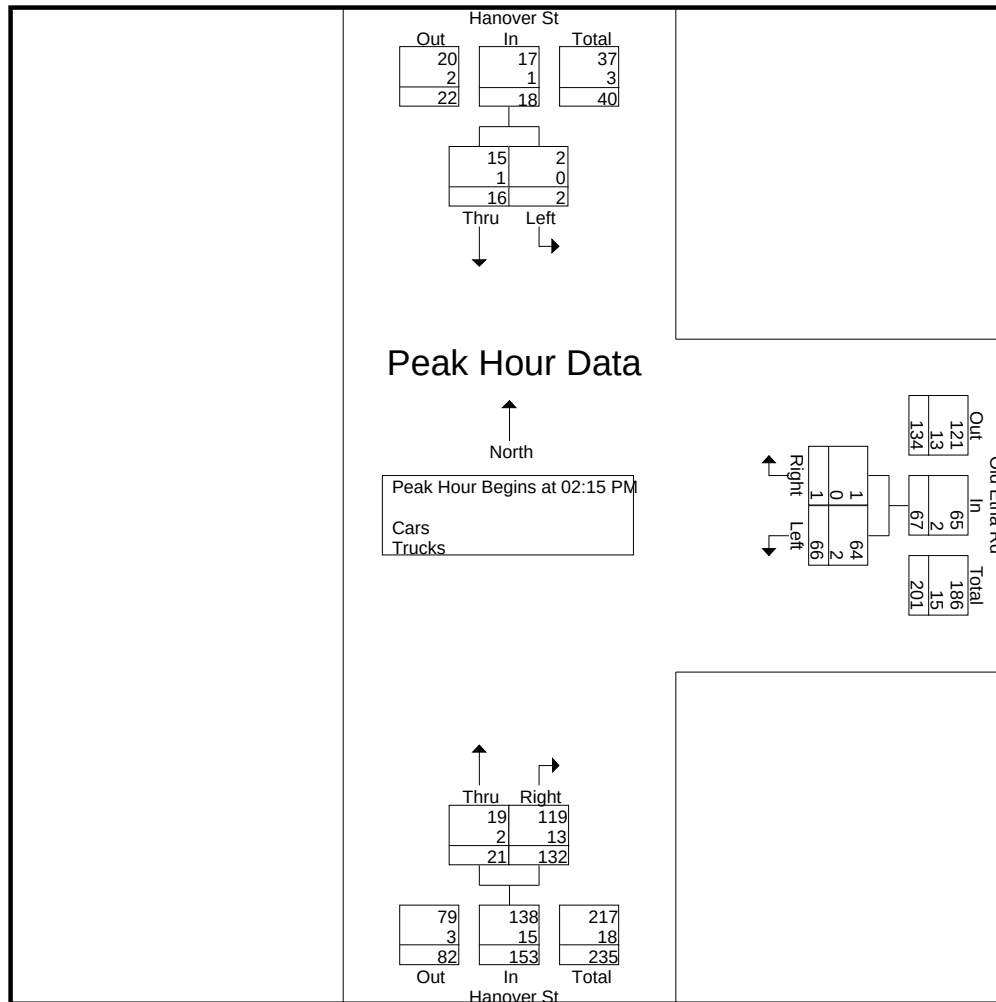
	Hanover St From North		Old Etna Rd From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
02:00 PM	0	9	8	0	7	22	46
02:15 PM	0	2	13	1	2	19	37
02:30 PM	1	3	16	0	3	24	47
02:45 PM	1	6	18	0	5	20	50
Total	2	20	55	1	17	85	180
03:00 PM	0	5	19	0	11	69	104
03:15 PM	0	1	5	1	8	18	33
03:30 PM	0	6	5	0	3	15	29
03:45 PM	0	8	11	1	1	5	26
Total	0	20	40	2	23	107	192
04:00 PM	0	7	5	1	5	9	27
04:15 PM	2	9	5	1	2	7	26
04:30 PM	0	7	5	0	2	8	22
04:45 PM	0	8	6	1	6	9	30
Total	2	31	21	3	15	33	105
05:00 PM	0	9	8	0	4	21	42
05:15 PM	0	6	9	0	1	7	23
05:30 PM	0	9	1	0	3	5	18
05:45 PM	0	5	2	0	5	5	17
Total	0	29	20	0	13	38	100
Grand Total	4	100	136	6	68	263	577
Apprch %	3.8	96.2	95.8	4.2	20.5	79.5	
Total %	0.7	17.3	23.6	1	11.8	45.6	
Cars	4	99	133	6	64	249	555
% Cars	100	99	97.8	100	94.1	94.7	96.2
Trucks	0	1	3	0	4	14	22
% Trucks	0	1	2.2	0	5.9	5.3	3.8

	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:15 PM										
02:15 PM	0	2	2	13	1	14	2	19	21	37
02:30 PM	1	3	4	16	0	16	3	24	27	47
02:45 PM	1	6	7	18	0	18	5	20	25	50
03:00 PM	0	5	5	19	0	19	11	69	80	104
Total Volume	2	16	18	66	1	67	21	132	153	238
% App. Total	11.1	88.9		98.5	1.5		13.7	86.3		
PHF	.500	.667	.643	.868	.250	.882	.477	.478	.478	.572
Cars	2	15	17	64	1	65	19	119	138	220
% Cars	100	93.8	94.4	97.0	100	97.0	90.5	90.2	90.2	92.4
Trucks	0	1	1	2	0	2	2	13	15	18
% Trucks	0	6.3	5.6	3.0	0	3.0	9.5	9.8	9.8	7.6

Accurate Counts
978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 2



Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

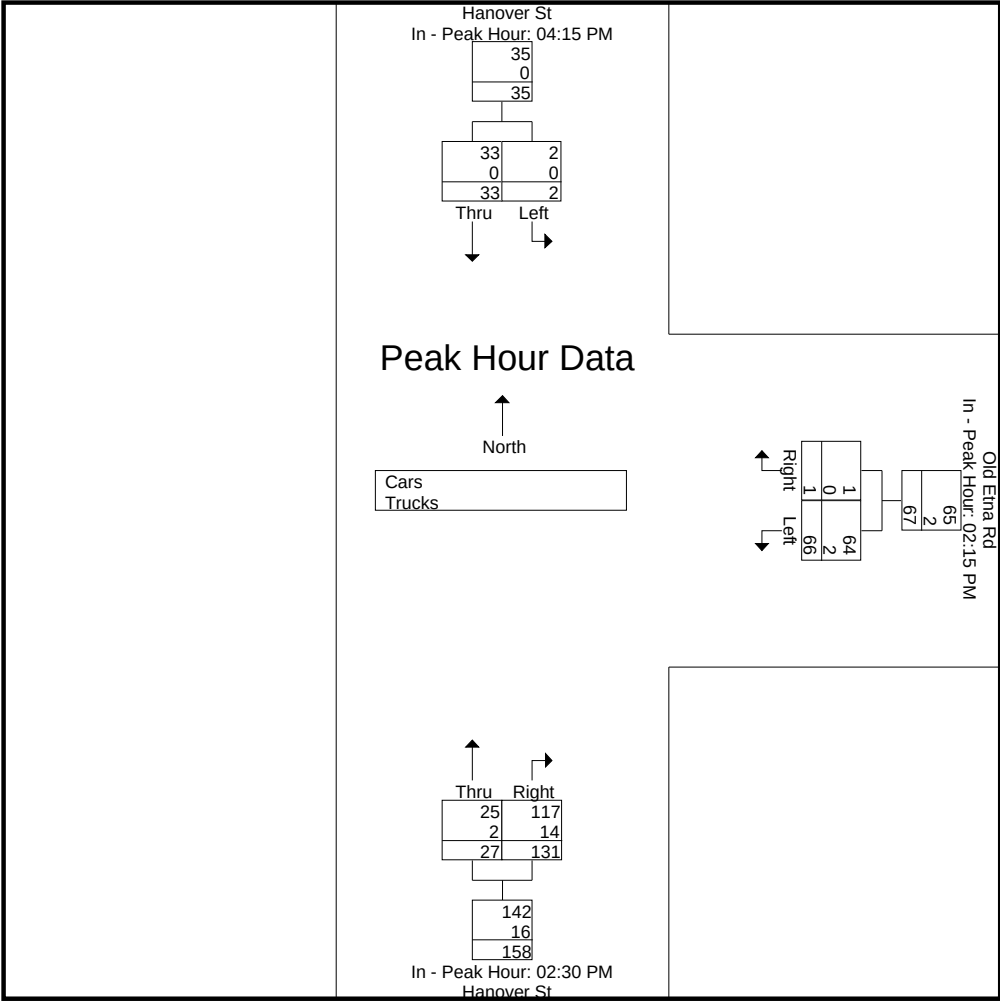
	04:15 PM			02:15 PM			02:30 PM		
+0 mins.	2	9	11	13	1	14	3	24	27
+15 mins.	0	7	7	16	0	16	5	20	25
+30 mins.	0	8	8	18	0	18	11	69	80
+45 mins.	0	9	9	19	0	19	8	18	26
Total Volume	2	33	35	66	1	67	27	131	158
% App. Total	5.7	94.3		98.5	1.5		17.1	82.9	
PHF	.250	.917	.795	.868	.250	.882	.614	.475	.494
Cars	2	33	35	64	1	65	25	117	142
% Cars	100	100	100	97	100	97	92.6	89.3	89.9
Trucks	0	0	0	2	0	2	2	14	16
% Trucks	0	0	0	3	0	3	7.4	10.7	10.1

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 3



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 4

Groups Printed- Cars

	Hanover St From North		Old Etna Rd From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
02:00 PM	0	9	8	0	6	22	45
02:15 PM	0	1	13	1	1	19	35
02:30 PM	1	3	16	0	2	17	39
02:45 PM	1	6	17	0	5	17	46
Total	2	19	54	1	14	75	165
03:00 PM	0	5	18	0	11	66	100
03:15 PM	0	1	5	1	7	17	31
03:30 PM	0	6	5	0	3	15	29
03:45 PM	0	8	10	1	1	5	25
Total	0	20	38	2	22	103	185
04:00 PM	0	7	5	1	5	9	27
04:15 PM	2	9	5	1	2	7	26
04:30 PM	0	7	5	0	2	8	22
04:45 PM	0	8	6	1	6	9	30
Total	2	31	21	3	15	33	105
05:00 PM	0	9	8	0	4	21	42
05:15 PM	0	6	9	0	1	7	23
05:30 PM	0	9	1	0	3	5	18
05:45 PM	0	5	2	0	5	5	17
Total	0	29	20	0	13	38	100
Grand Total	4	99	133	6	64	249	555
Apprch %	3.9	96.1	95.7	4.3	20.4	79.6	
Total %	0.7	17.8	24	1.1	11.5	44.9	

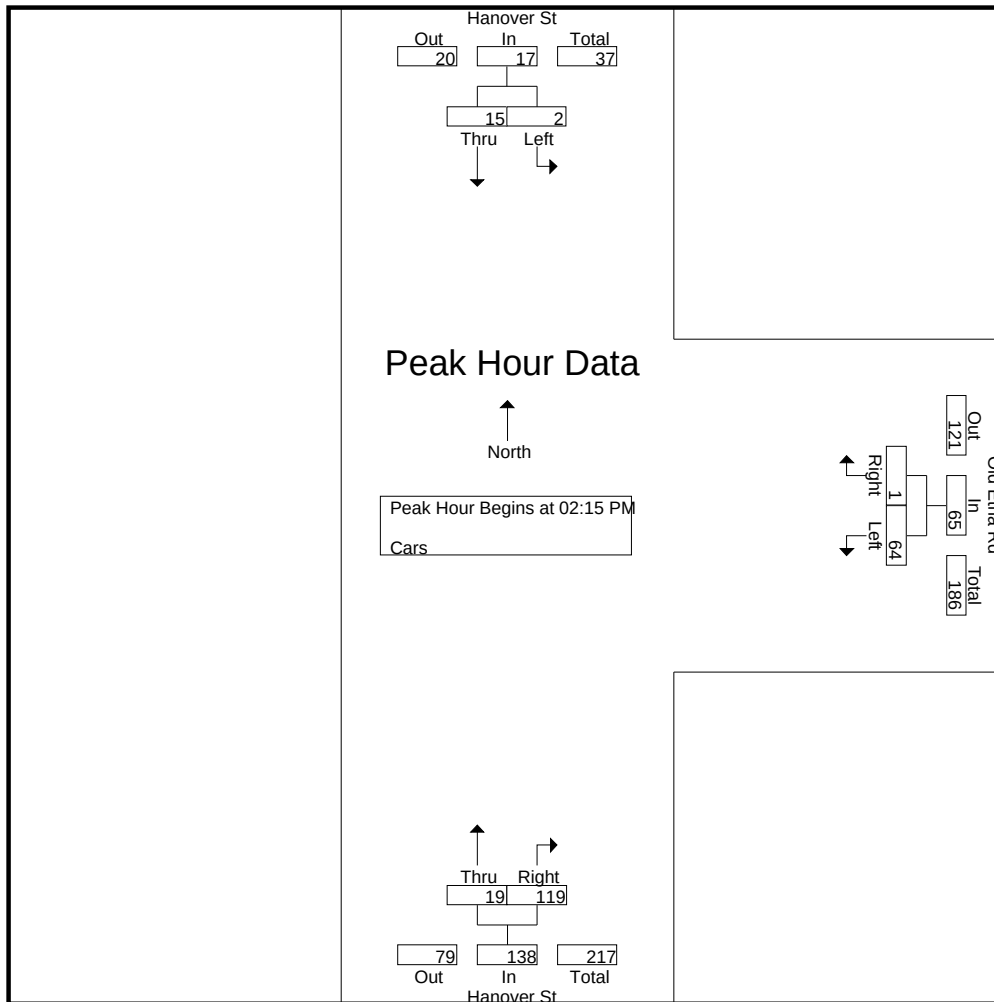
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:15 PM										
02:15 PM	0	1	1	13	1	14	1	19	20	35
02:30 PM	1	3	4	16	0	16	2	17	19	39
02:45 PM	1	6	7	17	0	17	5	17	22	46
03:00 PM	0	5	5	18	0	18	11	66	77	100
Total Volume	2	15	17	64	1	65	19	119	138	220
% App. Total	11.8	88.2		98.5	1.5		13.8	86.2		
PHF	.500	.625	.607	.889	.250	.903	.432	.451	.448	.550

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 5

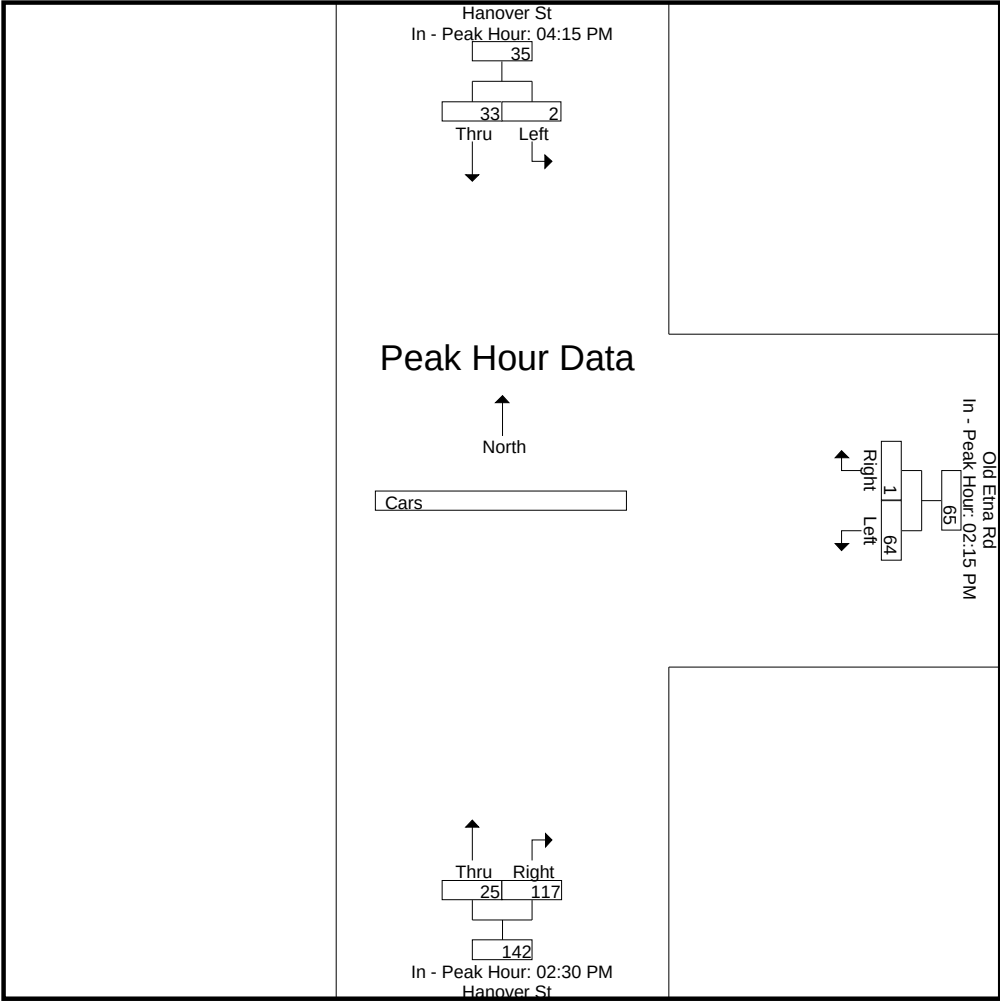


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:15 PM			02:15 PM			02:30 PM		
+0 mins.	2	9	11	13	1	14	2	17	19
+15 mins.	0	7	7	16	0	16	5	17	22
+30 mins.	0	8	8	17	0	17	11	66	77
+45 mins.	0	9	9	18	0	18	7	17	24
Total Volume	2	33	35	64	1	65	25	117	142
% App. Total	5.7	94.3		98.5	1.5		17.6	82.4	
PHF	.250	.917	.795	.889	.250	.903	.568	.443	.461

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 7

Groups Printed- Trucks

	Hanover St From North		Old Etna Rd From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
02:00 PM	0	0	0	0	1	0	1
02:15 PM	0	1	0	0	1	0	2
02:30 PM	0	0	0	0	1	7	8
02:45 PM	0	0	1	0	0	3	4
Total	0	1	1	0	3	10	15
03:00 PM	0	0	1	0	0	3	4
03:15 PM	0	0	0	0	1	1	2
03:30 PM	0	0	0	0	0	0	0
03:45 PM	0	0	1	0	0	0	1
Total	0	0	2	0	1	4	7
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	1	3	0	4	14	22
Apprch %	0	100	100	0	22.2	77.8	
Total %	0	4.5	13.6	0	18.2	63.6	

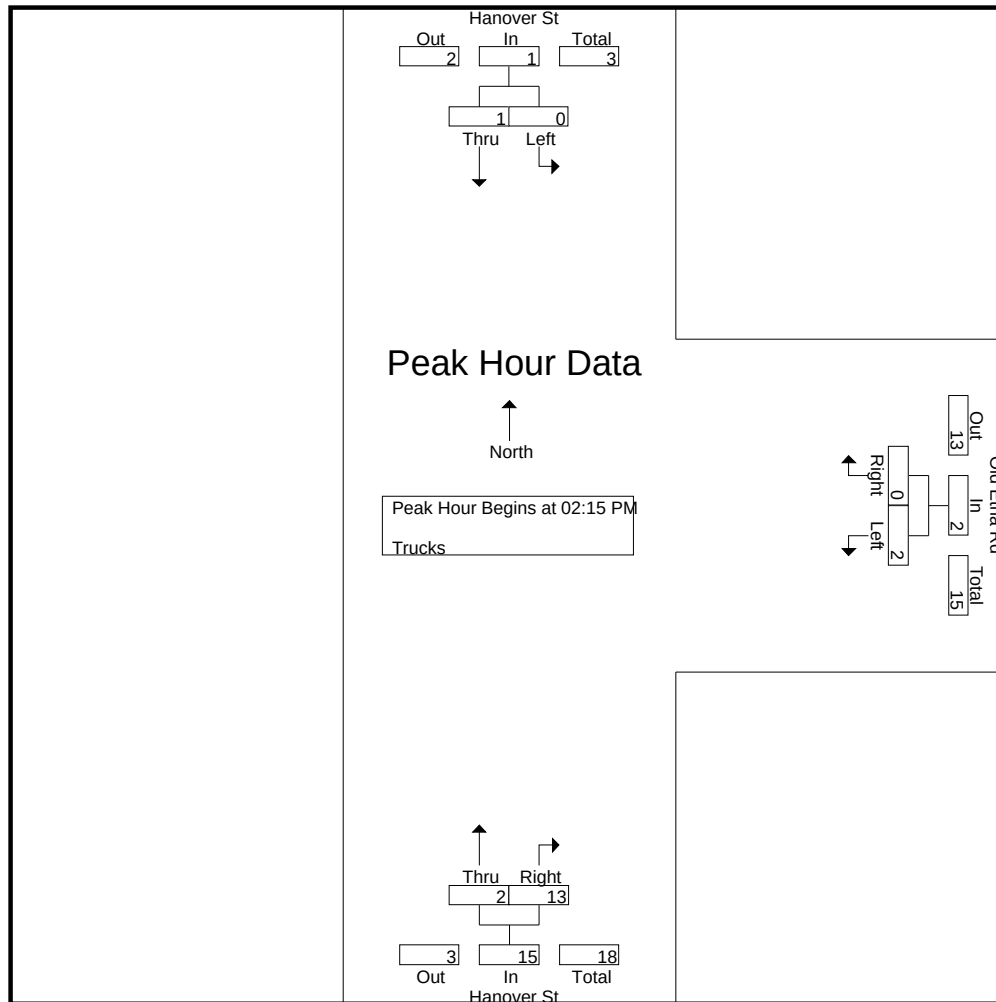
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:15 PM										
02:15 PM	0	1	1	0	0	0	1	0	1	2
02:30 PM	0	0	0	0	0	0	1	7	8	8
02:45 PM	0	0	0	1	0	1	0	3	3	4
03:00 PM	0	0	0	1	0	1	0	3	3	4
Total Volume	0	1	1	2	0	2	2	13	15	18
% App. Total	0	100		100	0		13.3	86.7		
PHF	.000	.250	.250	.500	.000	.500	.500	.464	.469	.563

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
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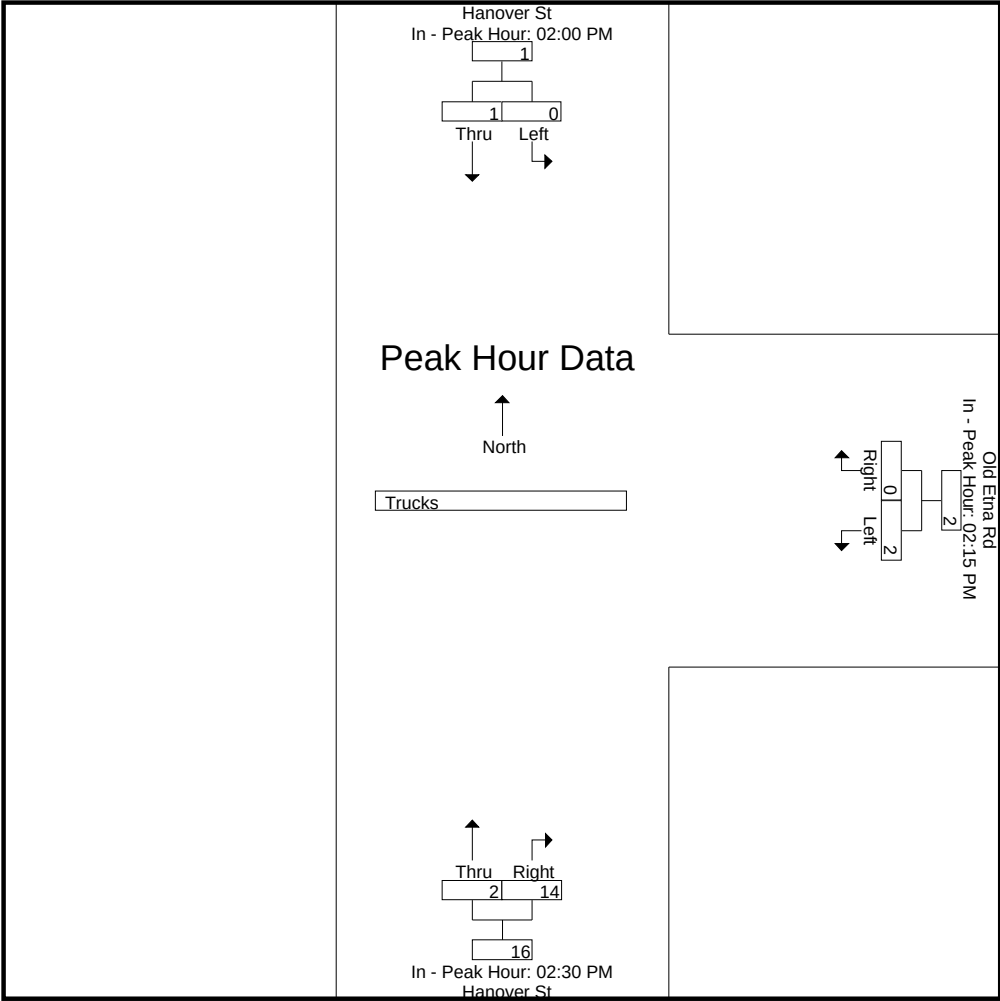


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	02:00 PM			02:15 PM			02:30 PM		
+0 mins.	0	0	0	0	0	0	1	7	8
+15 mins.	0	1	1	0	0	0	0	3	3
+30 mins.	0	0	0	1	0	1	0	3	3
+45 mins.	0	0	0	1	0	1	1	1	2
Total Volume	0	1	1	2	0	2	2	14	16
% App. Total	0	100		100	0		12.5	87.5	
PHF	.000	.250	.250	.500	.000	.500	.500	.500	.500

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 10

Groups Printed- Bikes Peds

	Hanover St From North			Old Etna Rd From East			Hanover St From South			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
02:00 PM	0	0	0	0	0	0	0	0	1	1	0	1
02:15 PM	0	0	0	0	0	0	0	0	1	1	0	1
02:30 PM	0	0	0	3	0	0	0	0	0	0	3	3
02:45 PM	0	0	0	1	0	0	0	0	0	0	1	1
Total	0	0	0	4	0	0	0	0	2	2	4	6
03:00 PM	0	1	0	0	0	1	0	0	0	1	1	2
03:15 PM	0	0	0	0	0	1	0	1	3	4	1	5
03:30 PM	0	0	0	0	0	2	0	0	1	3	0	3
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	4	0	1	4	8	2	10
04:00 PM	0	1	0	0	0	0	1	0	1	1	2	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	1	0	0	0	0	0	0	0	0	0	1	1
Total	1	1	0	0	0	0	1	0	1	1	3	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	2	0	4	0	4	1	1	7	11	9	20
Apprch %	33.3	66.7		100	0		50	50				
Total %	11.1	22.2		44.4	0		11.1	11.1		55	45	

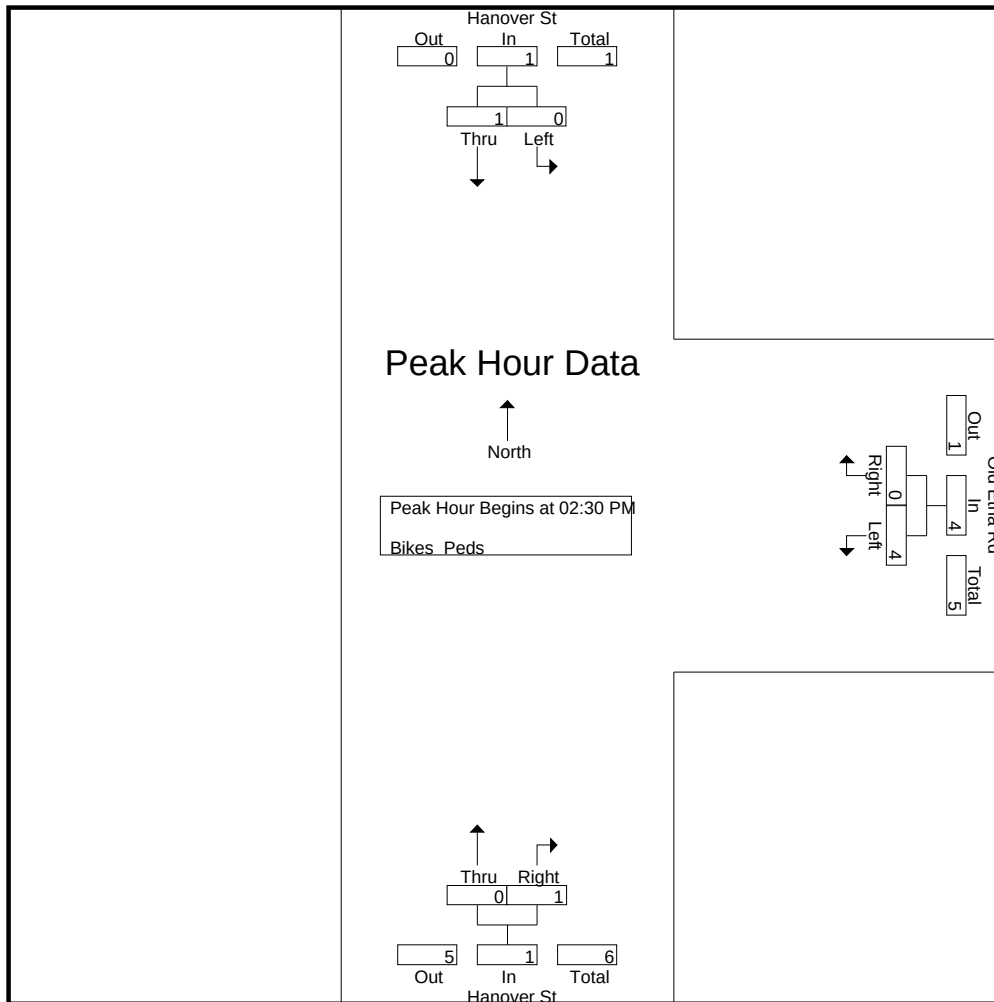
	Hanover St From North			Old Etna Rd From East			Hanover St From South			Int. Total
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:30 PM										
02:30 PM	0	0	0	3	0	3	0	0	0	3
02:45 PM	0	0	0	1	0	1	0	0	0	1
03:00 PM	0	1	1	0	0	0	0	0	0	1
03:15 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	0	1	1	4	0	4	0	1	1	6
% App. Total	0	100		100	0		0	100		
PHF	.000	.250	.250	.333	.000	.333	.000	.250	.250	.500

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933002
 Site Code : 52933002
 Start Date : 11/10/2022
 Page No : 11

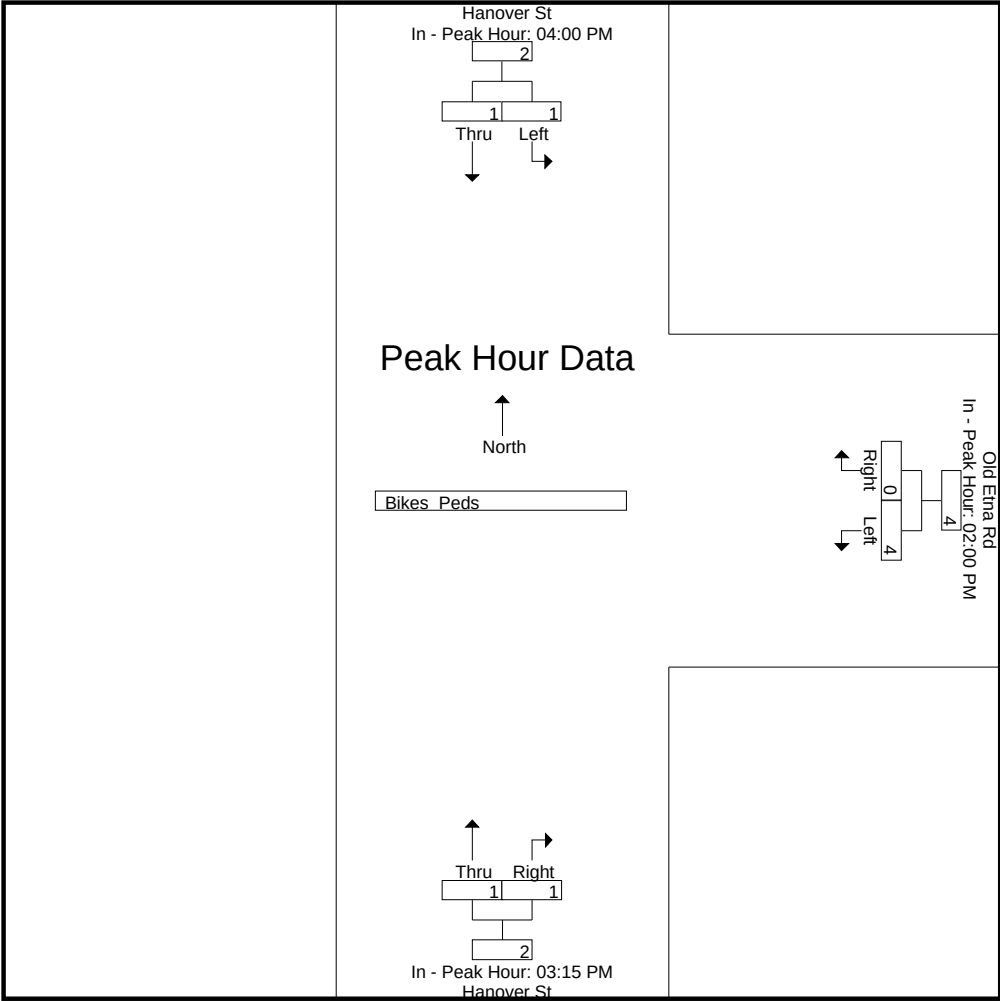


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM			02:00 PM			03:15 PM		
+0 mins.	0	1	1	0	0	0	0	1	1
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	3	0	3	0	0	0
+45 mins.	1	0	1	1	0	1	1	0	1
Total Volume	1	1	2	4	0	4	1	1	2
% App. Total	50	50		100	0		50	50	
PHF	.250	.250	.500	.333	.000	.333	.250	.250	.500

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933002
Site Code : 52933002
Start Date : 11/10/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S2
Site Code : 52933002
Start Date : 11/12/2022
Page No : 1

Groups Printed- Cars - Trucks

	Hanover St From North		Old Etna Rd From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	1	0	0	1	5	7
11:15 AM	0	2	2	0	3	5	12
11:30 AM	0	2	1	0	4	1	8
11:45 AM	0	6	2	0	3	2	13
Total	0	11	5	0	11	13	40
12:00 PM	0	4	0	0	3	2	9
12:15 PM	0	4	0	1	3	1	9
12:30 PM	0	1	1	0	6	2	10
12:45 PM	0	3	0	0	2	1	6
Total	0	12	1	1	14	6	34
Grand Total	0	23	6	1	25	19	74
Apprch %	0	100	85.7	14.3	56.8	43.2	
Total %	0	31.1	8.1	1.4	33.8	25.7	
Cars	0	23	6	1	25	19	74
% Cars	0	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0

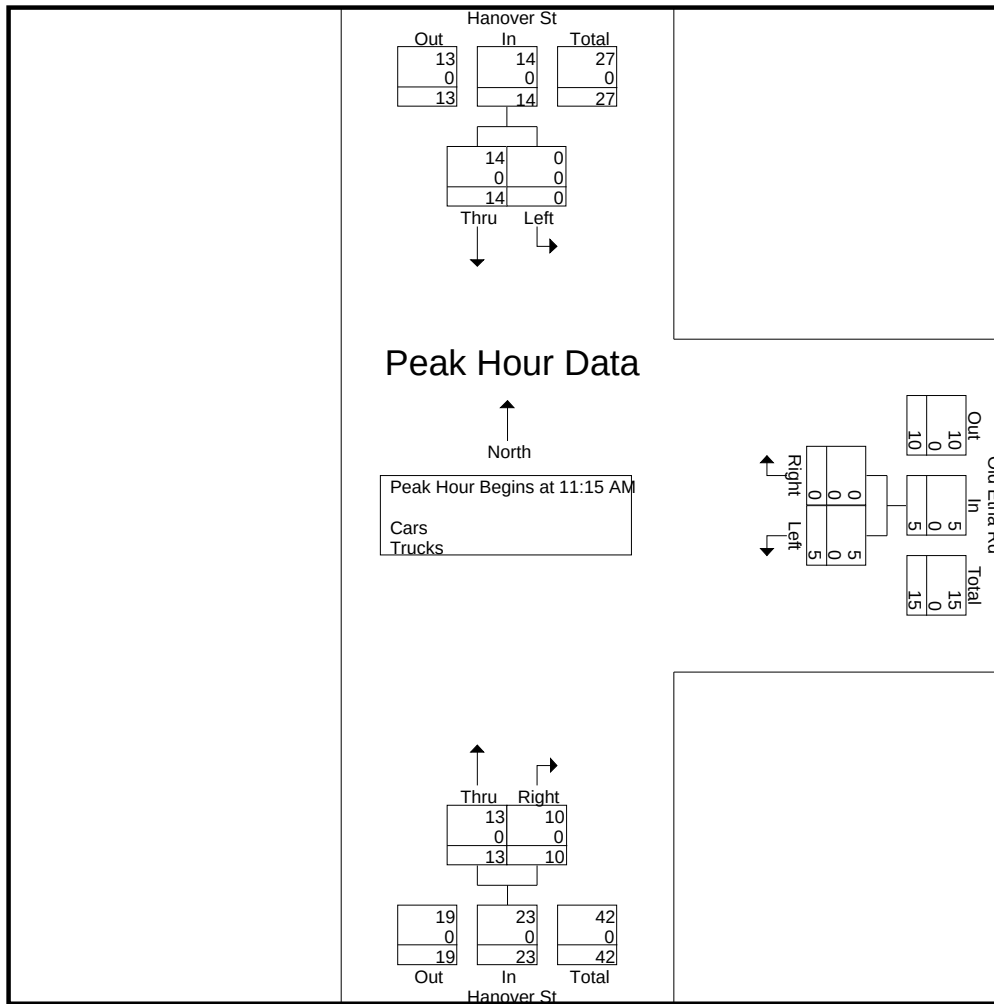
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	0	2	2	2	0	2	3	5	8	12
11:30 AM	0	2	2	1	0	1	4	1	5	8
11:45 AM	0	6	6	2	0	2	3	2	5	13
12:00 PM	0	4	4	0	0	0	3	2	5	9
Total Volume	0	14	14	5	0	5	13	10	23	42
% App. Total	0	100		100	0		56.5	43.5		
PHF	.000	.583	.583	.625	.000	.625	.813	.500	.719	.808
Cars	0	14	14	5	0	5	13	10	23	42
% Cars	0	100	100	100	0	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S2
Site Code : 52933002
Start Date : 11/12/2022
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

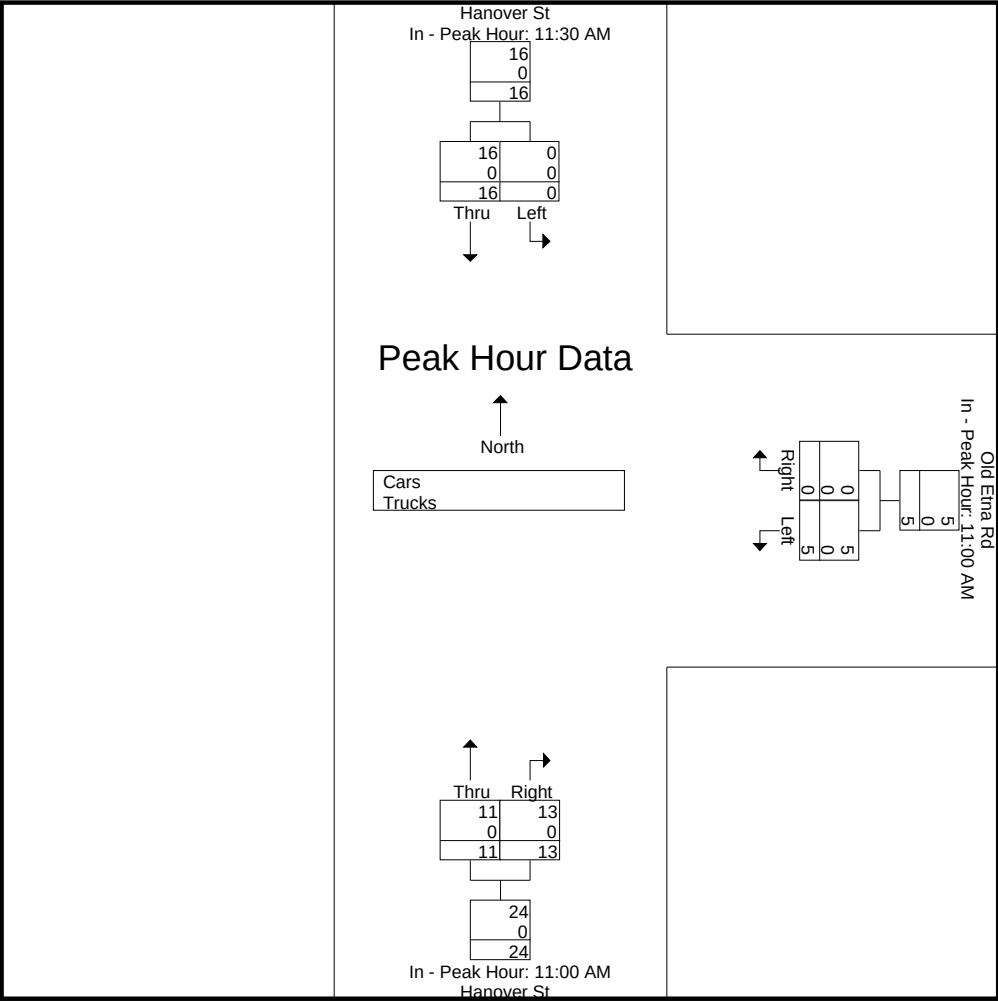
	11:30 AM			11:00 AM			11:00 AM		
+0 mins.	0	2	2	0	0	0	1	5	6
+15 mins.	0	6	6	2	0	2	3	5	8
+30 mins.	0	4	4	1	0	1	4	1	5
+45 mins.	0	4	4	2	0	2	3	2	5
Total Volume	0	16	16	5	0	5	11	13	24
% App. Total	0	100		100	0		45.8	54.2	
PHF	.000	.667	.667	.625	.000	.625	.688	.650	.750
Cars	0	16	16	5	0	5	11	13	24
% Cars	0	100	100	100	0	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S2
 Site Code : 52933002
 Start Date : 11/12/2022
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Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S2
Site Code : 52933002
Start Date : 11/12/2022
Page No : 4

Groups Printed- Cars

	Hanover St From North		Old Etna Rd From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	1	0	0	1	5	7
11:15 AM	0	2	2	0	3	5	12
11:30 AM	0	2	1	0	4	1	8
11:45 AM	0	6	2	0	3	2	13
Total	0	11	5	0	11	13	40
12:00 PM	0	4	0	0	3	2	9
12:15 PM	0	4	0	1	3	1	9
12:30 PM	0	1	1	0	6	2	10
12:45 PM	0	3	0	0	2	1	6
Total	0	12	1	1	14	6	34
Grand Total	0	23	6	1	25	19	74
Apprch %	0	100	85.7	14.3	56.8	43.2	
Total %	0	31.1	8.1	1.4	33.8	25.7	

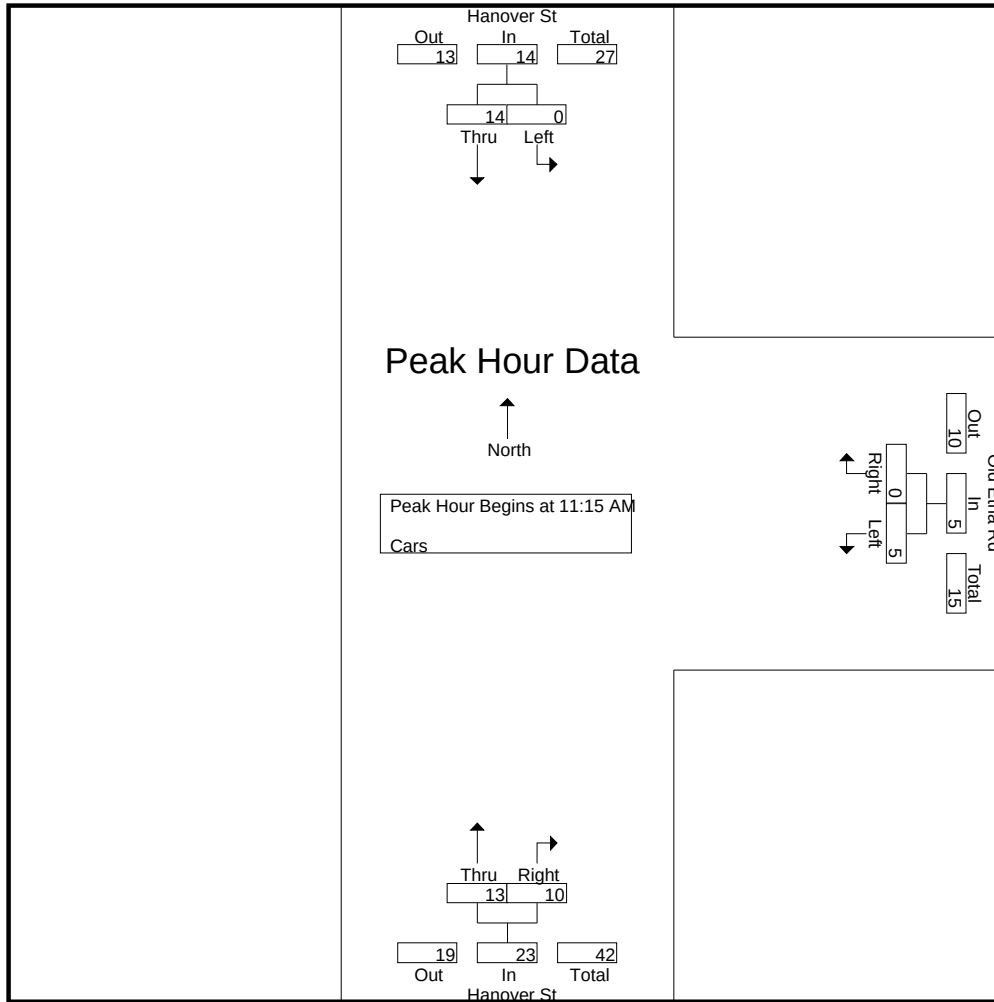
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	0	2	2	2	0	2	3	5	8	12
11:30 AM	0	2	2	1	0	1	4	1	5	8
11:45 AM	0	6	6	2	0	2	3	2	5	13
12:00 PM	0	4	4	0	0	0	3	2	5	9
Total Volume	0	14	14	5	0	5	13	10	23	42
% App. Total	0	100		100	0		56.5	43.5		
PHF	.000	.583	.583	.625	.000	.625	.813	.500	.719	.808

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S2
 Site Code : 52933002
 Start Date : 11/12/2022
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Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

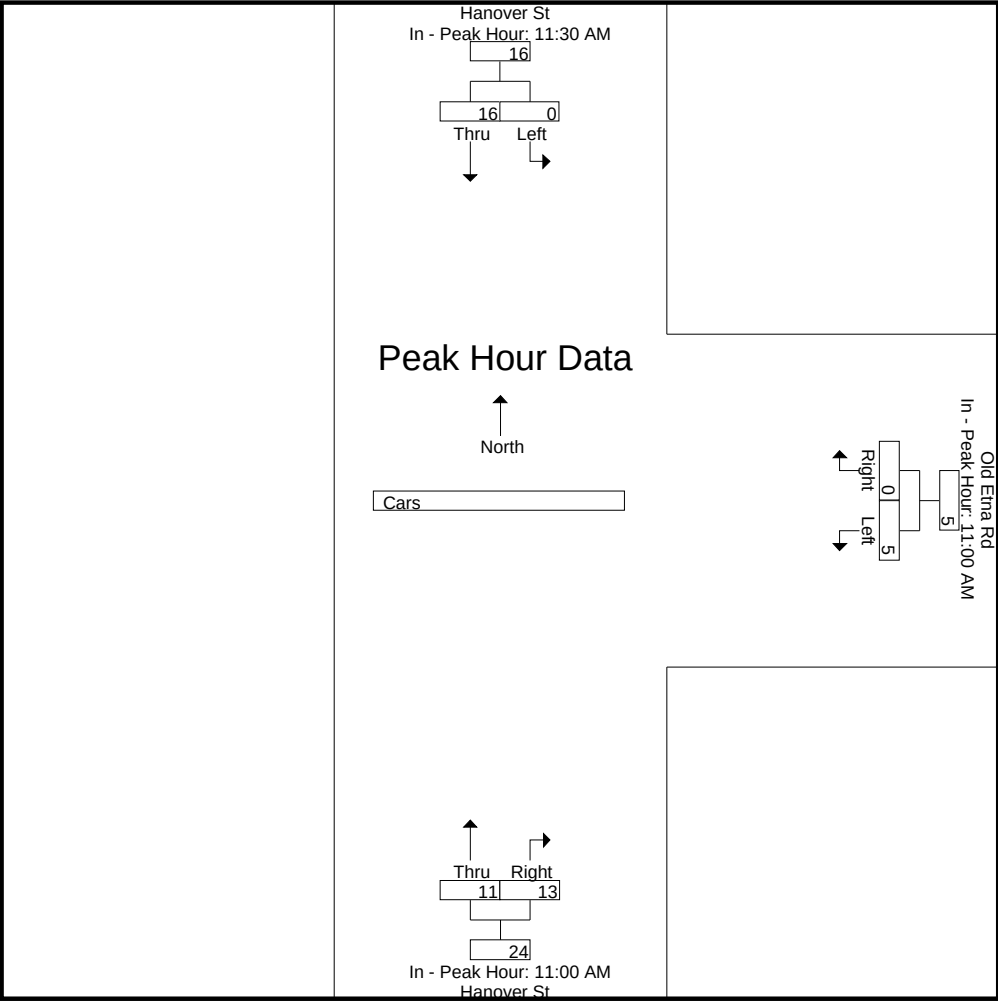
	11:30 AM			11:00 AM			11:00 AM		
+0 mins.	0	2	2	0	0	0	1	5	6
+15 mins.	0	6	6	2	0	2	3	5	8
+30 mins.	0	4	4	1	0	1	4	1	5
+45 mins.	0	4	4	2	0	2	3	2	5
Total Volume	0	16	16	5	0	5	11	13	24
% App. Total	0	100		100	0		45.8	54.2	
PHF	.000	.667	.667	.625	.000	.625	.688	.650	.750

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S2
 Site Code : 52933002
 Start Date : 11/12/2022
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Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S2
 Site Code : 52933002
 Start Date : 11/12/2022
 Page No : 7

Groups Printed- Trucks

	Hanover St From North		Old Etna Rd From East		Hanover St From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	
Total %							

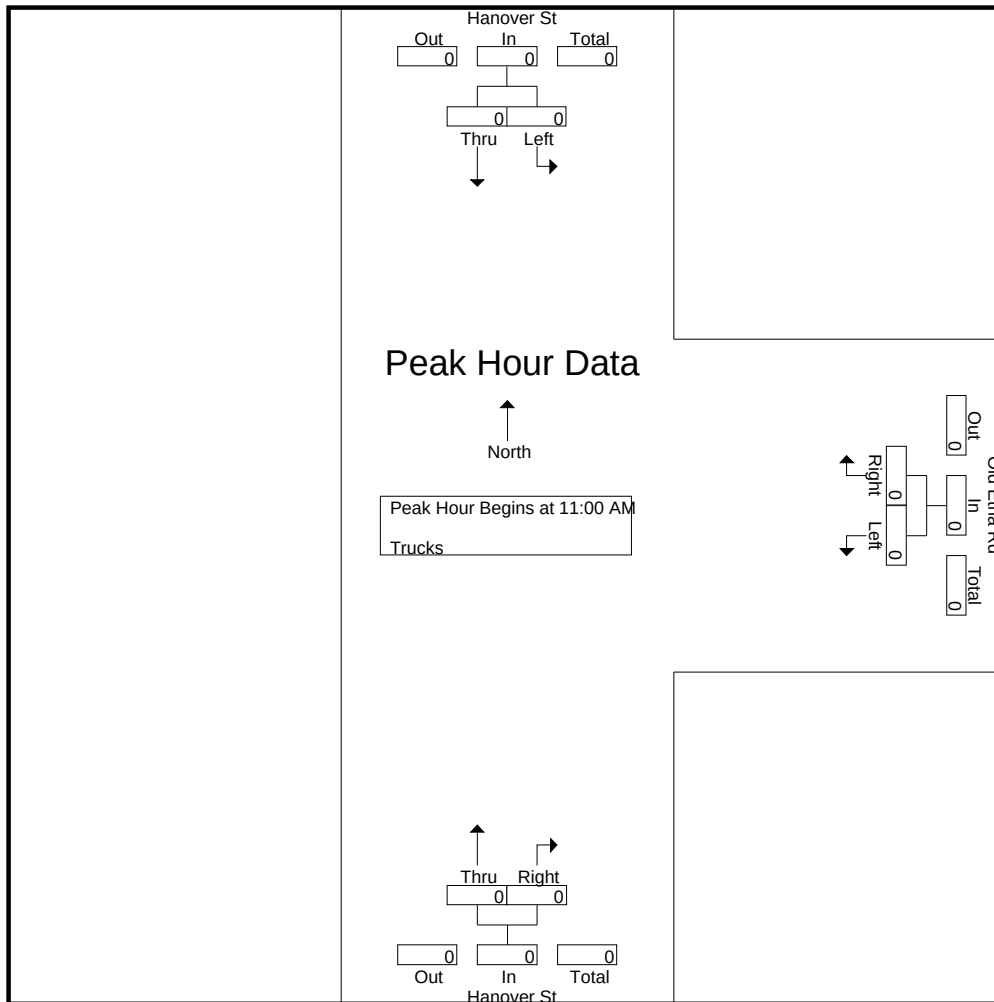
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S2
 Site Code : 52933002
 Start Date : 11/12/2022
 Page No : 8

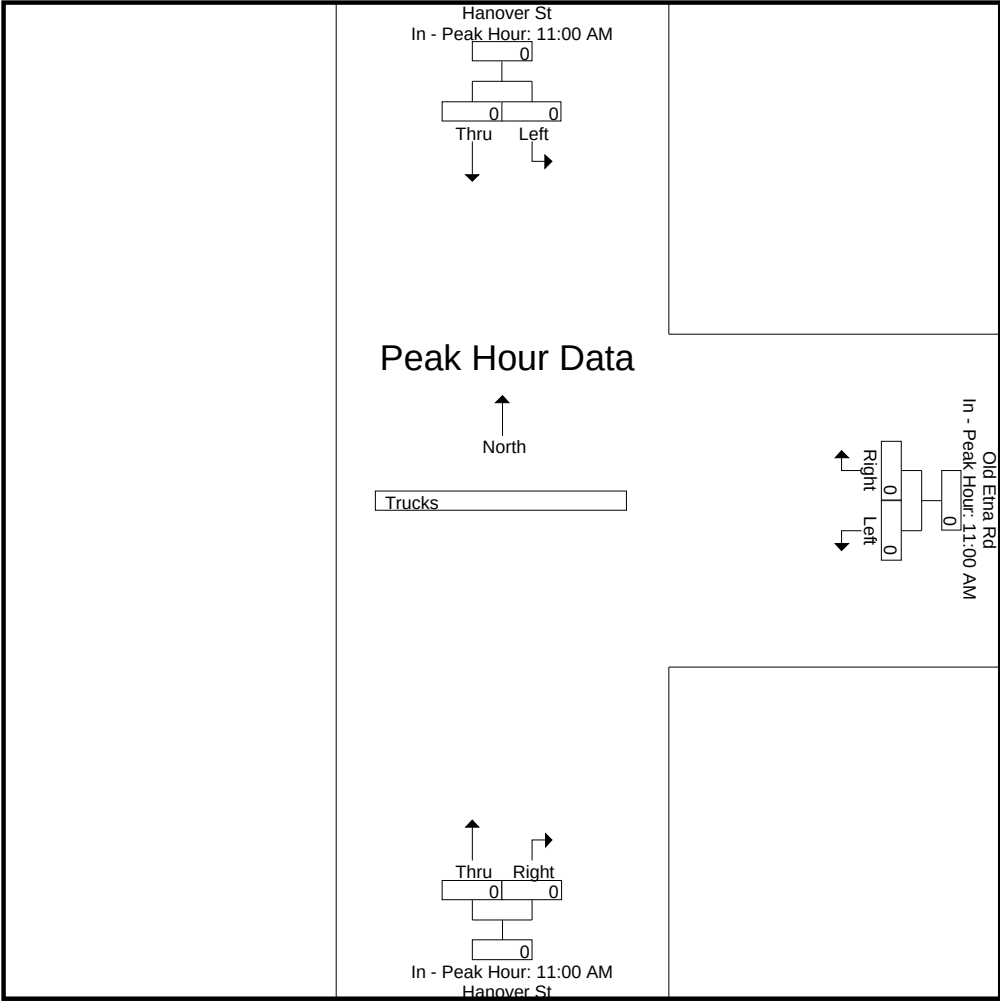


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S2
Site Code : 52933002
Start Date : 11/12/2022
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Accurate Counts

978-664-2565

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S2
Site Code : 52933002
Start Date : 11/12/2022
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Groups Printed- Bikes Peds

	Hanover St From North			Old Etna Rd From East			Hanover St From South			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
11:00 AM	0	0	0	2	0	0	0	0	0	0	2	2
11:15 AM	0	1	0	0	0	2	0	0	0	2	1	3
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	2	0	2	0	0	0	2	3	5
12:00 PM	0	0	0	0	0	0	1	0	0	0	1	1
12:15 PM	0	0	0	1	0	0	0	1	0	0	2	2
12:30 PM	0	0	0	0	0	0	0	0	1	1	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	1	1	1	1	3	4
Grand Total	0	1	0	3	0	2	1	1	1	3	6	9
Apprch %	0	100		100	0		50	50				
Total %	0	16.7		50	0		16.7	16.7		33.3	66.7	

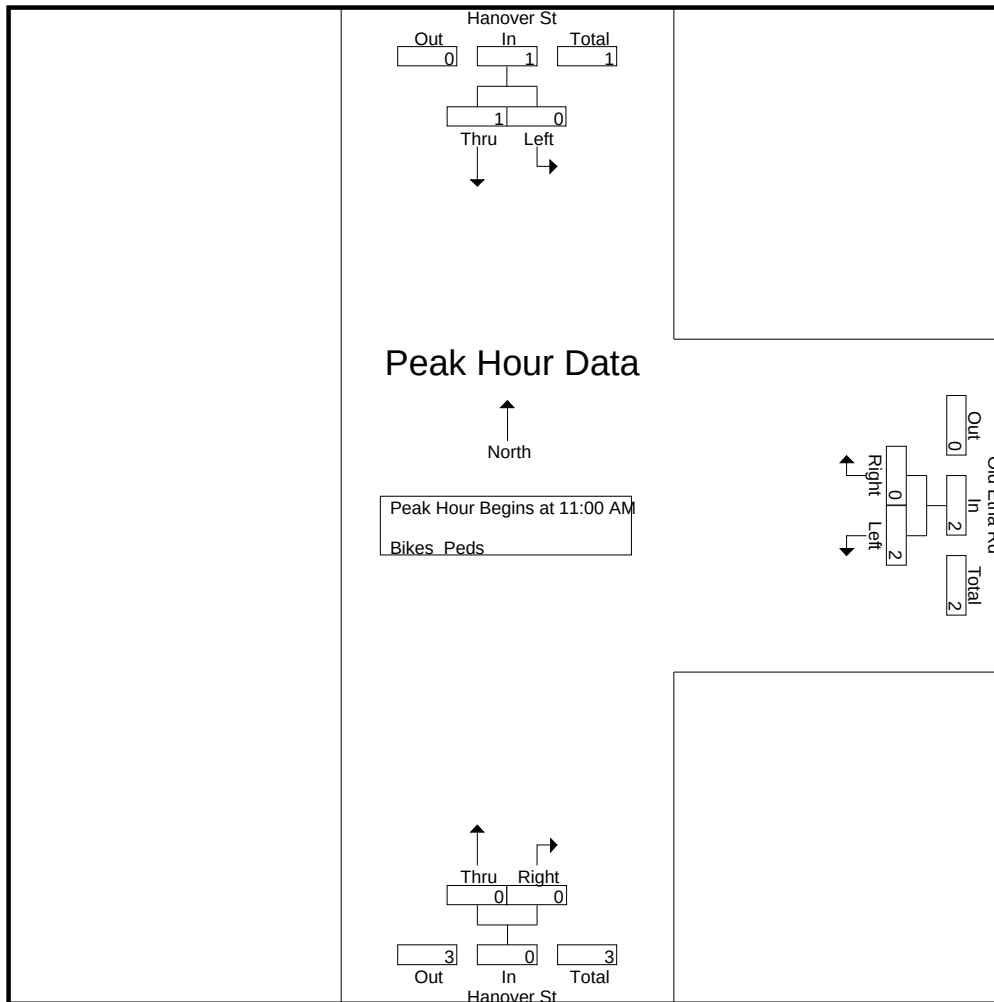
	Hanover St From North			Old Etna Rd From East			Hanover St From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	2	0	2	0	0	0	2
11:15 AM	0	1	1	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	2	0	2	0	0	0	3
% App. Total	0	100		100	0		0	0		
PHF	.000	.250	.250	.250	.000	.250	.000	.000	.000	.375

Accurate Counts

978-664-2565

N/S Street : Hanover Street
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S2
 Site Code : 52933002
 Start Date : 11/12/2022
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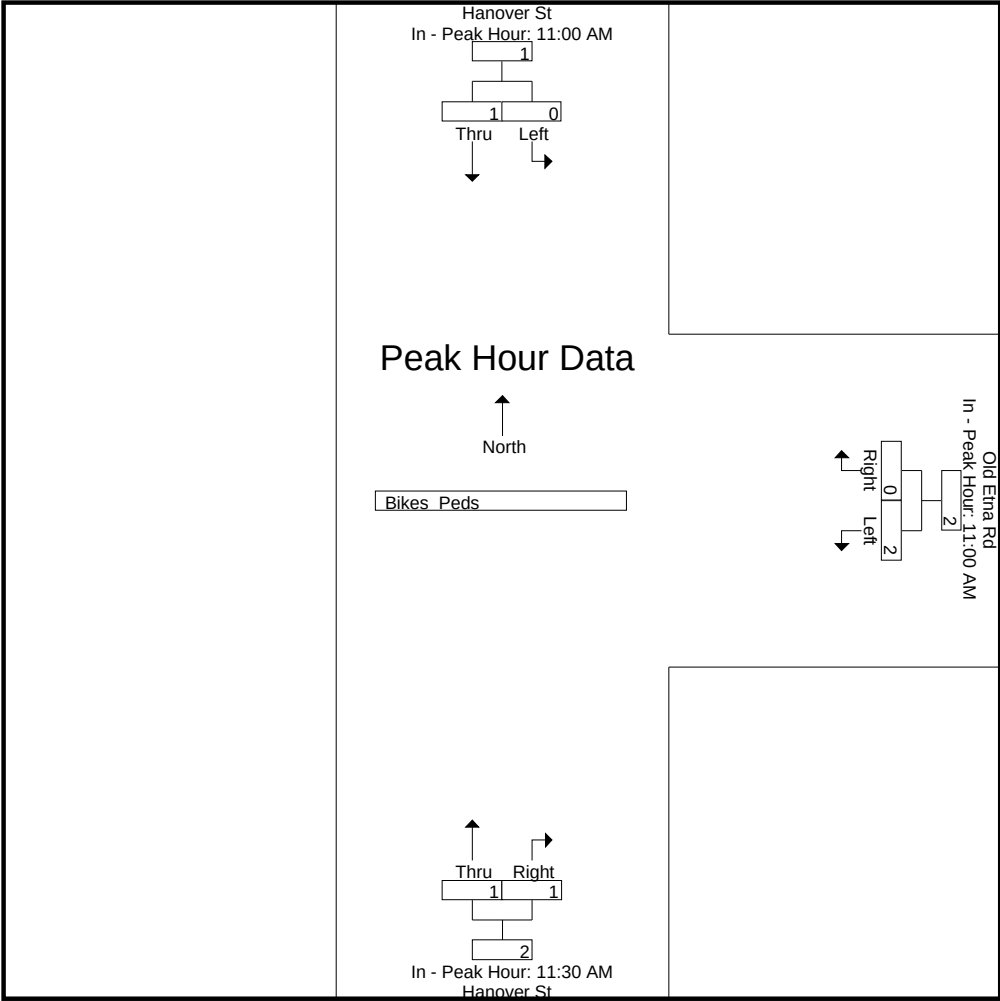


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:30 AM		
+0 mins.	0	0	0	2	0	2	0	0	0
+15 mins.	0	1	1	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	1	1
Total Volume	0	1	1	2	0	2	1	1	2
% App. Total	0	100		100	0		50	50	
PHF	.000	.250	.250	.250	.000	.250	.250	.250	.500

N/S Street : Hanover Street
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S2
Site Code : 52933002
Start Date : 11/12/2022
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Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right		Left	Thru		Left	Right		Int. Total
07:00 AM	14	1		1	25		7	0		48
07:15 AM	23	5		1	29		12	0		70
07:30 AM	25	5		0	34		11	1		76
07:45 AM	36	2		0	39		11	2		90
Total	98	13		2	127		41	3		284
08:00 AM	15	6		0	31		11	0		63
08:15 AM	21	1		0	21		8	0		51
08:30 AM	18	3		0	20		1	0		42
08:45 AM	18	2		0	21		2	0		43
Total	72	12		0	93		22	0		199
Grand Total	170	25		2	220		63	3		483
Apprch %	87.2	12.8		0.9	99.1		95.5	4.5		
Total %	35.2	5.2		0.4	45.5		13	0.6		
Cars	159	24		2	209		61	3		458
% Cars	93.5	96		100	95		96.8	100		94.8
Trucks	11	1		0	11		2	0		25
% Trucks	6.5	4		0	5		3.2	0		5.2

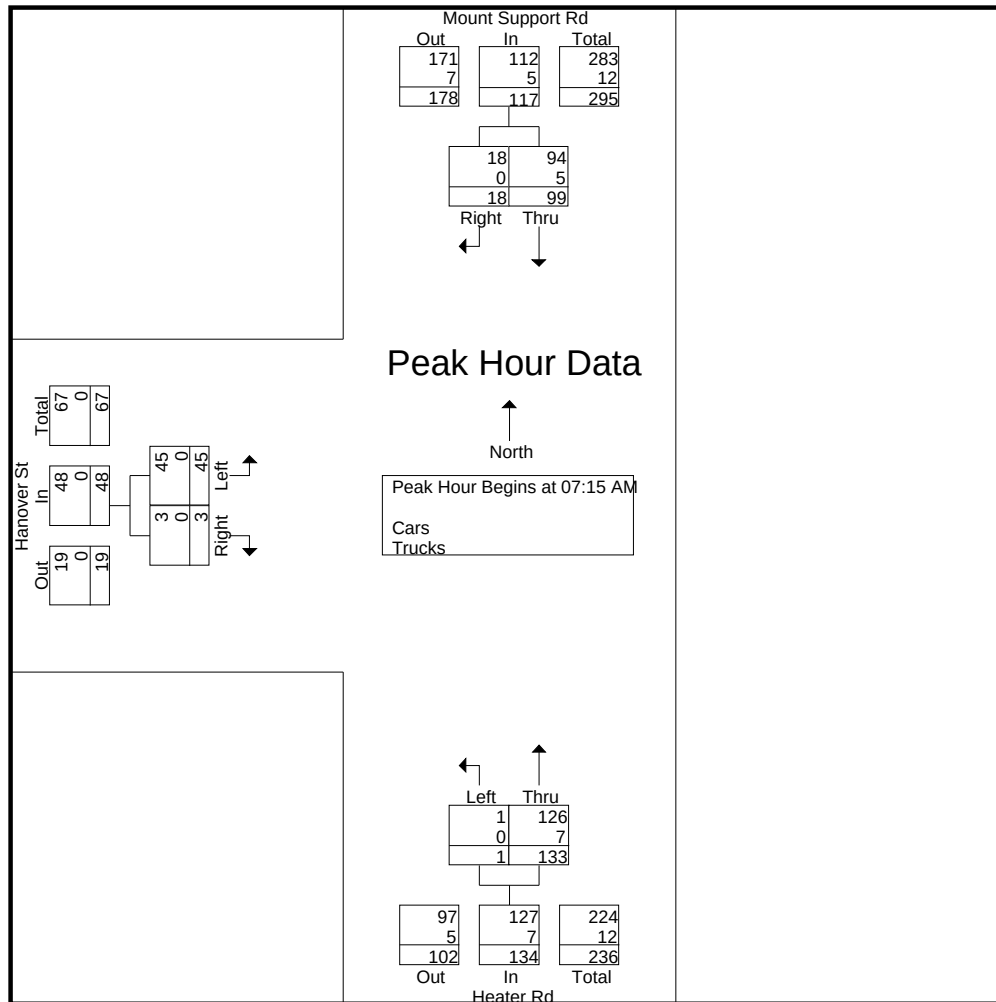
	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	23	5	28	1	29	30	12	0	12	70
07:30 AM	25	5	30	0	34	34	11	1	12	76
07:45 AM	36	2	38	0	39	39	11	2	13	90
08:00 AM	15	6	21	0	31	31	11	0	11	63
Total Volume	99	18	117	1	133	134	45	3	48	299
% App. Total	84.6	15.4		0.7	99.3		93.8	6.2		
PHF	.688	.750	.770	.250	.853	.859	.938	.375	.923	.831
Cars	94	18	112	1	126	127	45	3	48	287
% Cars	94.9	100	95.7	100	94.7	94.8	100	100	100	96.0
Trucks	5	0	5	0	7	7	0	0	0	12
% Trucks	5.1	0	4.3	0	5.3	5.2	0	0	0	4.0

Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
 E/W Street : Hanover Street
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933003
 Site Code : 52933003
 Start Date : 11/10/2022
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

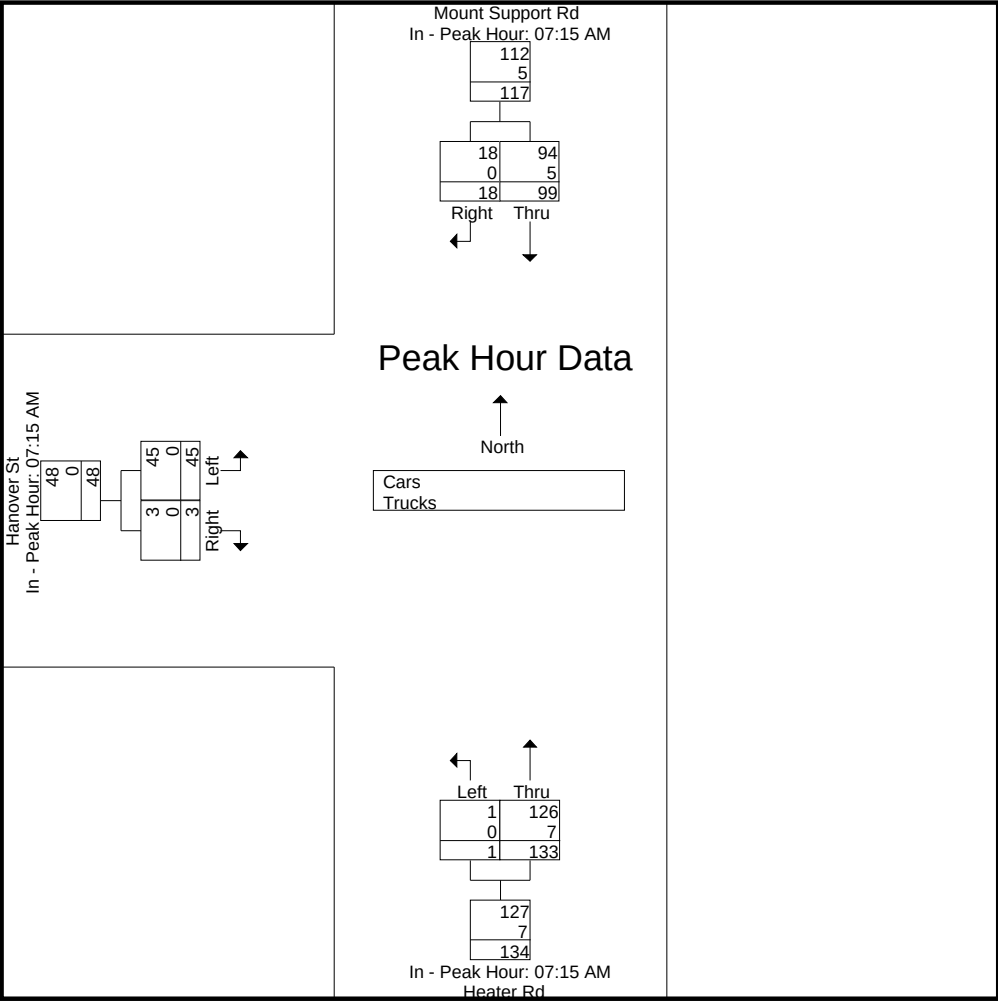
	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	23	5	28	1	29	30	12	0	12
+15 mins.	25	5	30	0	34	34	11	1	12
+30 mins.	36	2	38	0	39	39	11	2	13
+45 mins.	15	6	21	0	31	31	11	0	11
Total Volume	99	18	117	1	133	134	45	3	48
% App. Total	84.6	15.4		0.7	99.3		93.8	6.2	
PHF	.688	.750	.770	.250	.853	.859	.938	.375	.923
Cars	94	18	112	1	126	127	45	3	48
% Cars	94.9	100	95.7	100	94.7	94.8	100	100	100
Trucks	5	0	5	0	7	7	0	0	0
% Trucks	5.1	0	4.3	0	5.3	5.2	0	0	0

Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
 E/W Street : Hanover Street
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933003
 Site Code : 52933003
 Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
Page No : 4

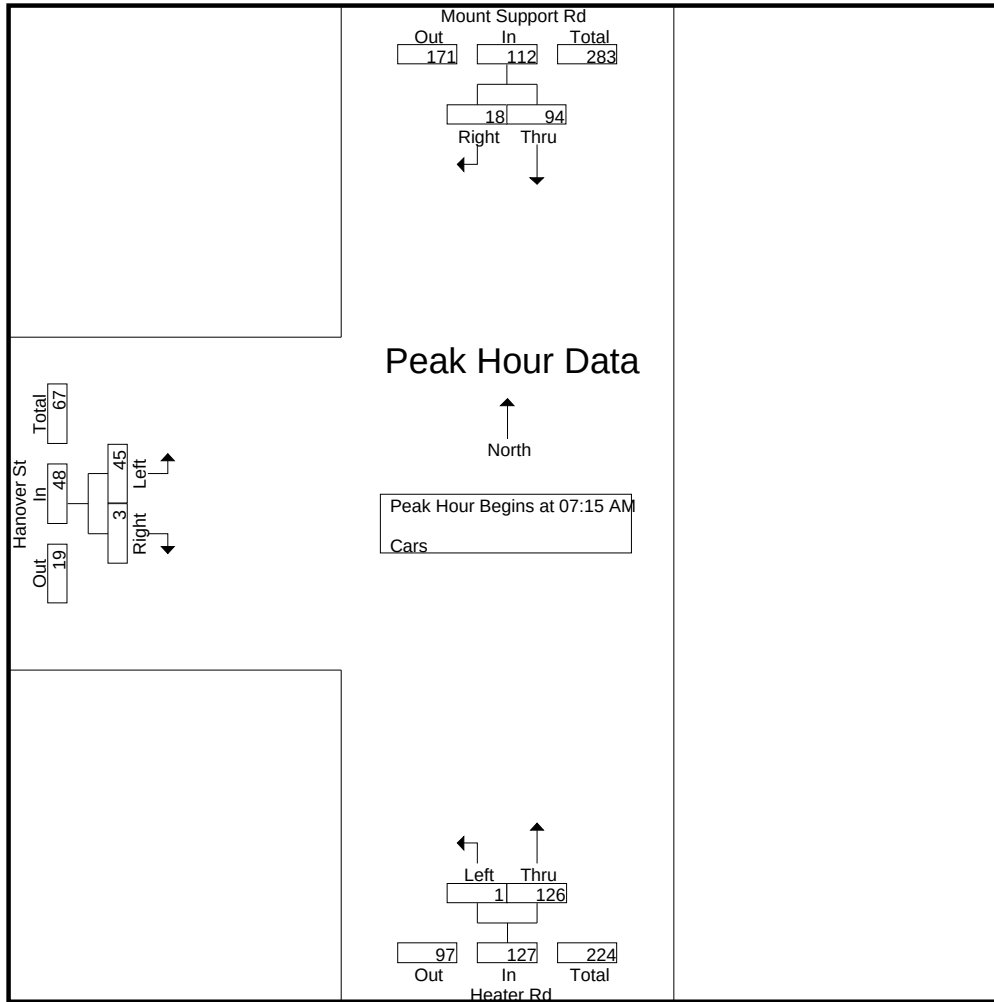
Groups Printed- Cars

	Mount Support Rd From North		Heater Rd From South		Hanover St From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	13	0	1	24	6	0	44
07:15 AM	22	5	1	27	12	0	67
07:30 AM	24	5	0	33	11	1	74
07:45 AM	33	2	0	36	11	2	84
Total	92	12	2	120	40	3	269
08:00 AM	15	6	0	30	11	0	62
08:15 AM	18	1	0	20	7	0	46
08:30 AM	16	3	0	19	1	0	39
08:45 AM	18	2	0	20	2	0	42
Total	67	12	0	89	21	0	189
Grand Total	159	24	2	209	61	3	458
Apprch %	86.9	13.1	0.9	99.1	95.3	4.7	
Total %	34.7	5.2	0.4	45.6	13.3	0.7	

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	22	5	27	1	27	28	12	0	12	67
07:30 AM	24	5	29	0	33	33	11	1	12	74
07:45 AM	33	2	35	0	36	36	11	2	13	84
08:00 AM	15	6	21	0	30	30	11	0	11	62
Total Volume	94	18	112	1	126	127	45	3	48	287
% App. Total	83.9	16.1		0.8	99.2		93.8	6.2		
PHF	.712	.750	.800	.250	.875	.882	.938	.375	.923	.854

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
Page No : 5

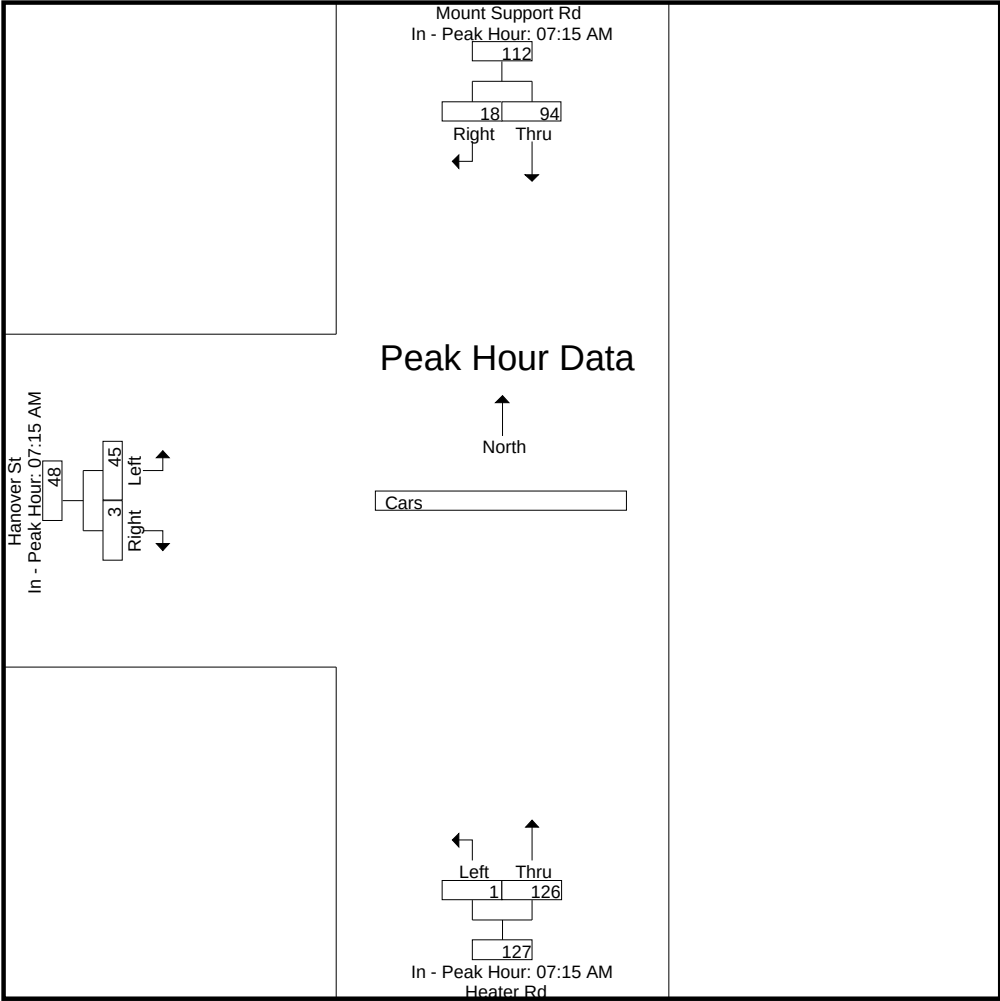


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	22	5	27	1	27	28	12	0	12
+15 mins.	24	5	29	0	33	33	11	1	12
+30 mins.	33	2	35	0	36	36	11	2	13
+45 mins.	15	6	21	0	30	30	11	0	11
Total Volume	94	18	112	1	126	127	45	3	48
% App. Total	83.9	16.1		0.8	99.2		93.8	6.2	
PHF	.712	.750	.800	.250	.875	.882	.938	.375	.923

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
 E/W Street : Hanover Street
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933003
 Site Code : 52933003
 Start Date : 11/10/2022
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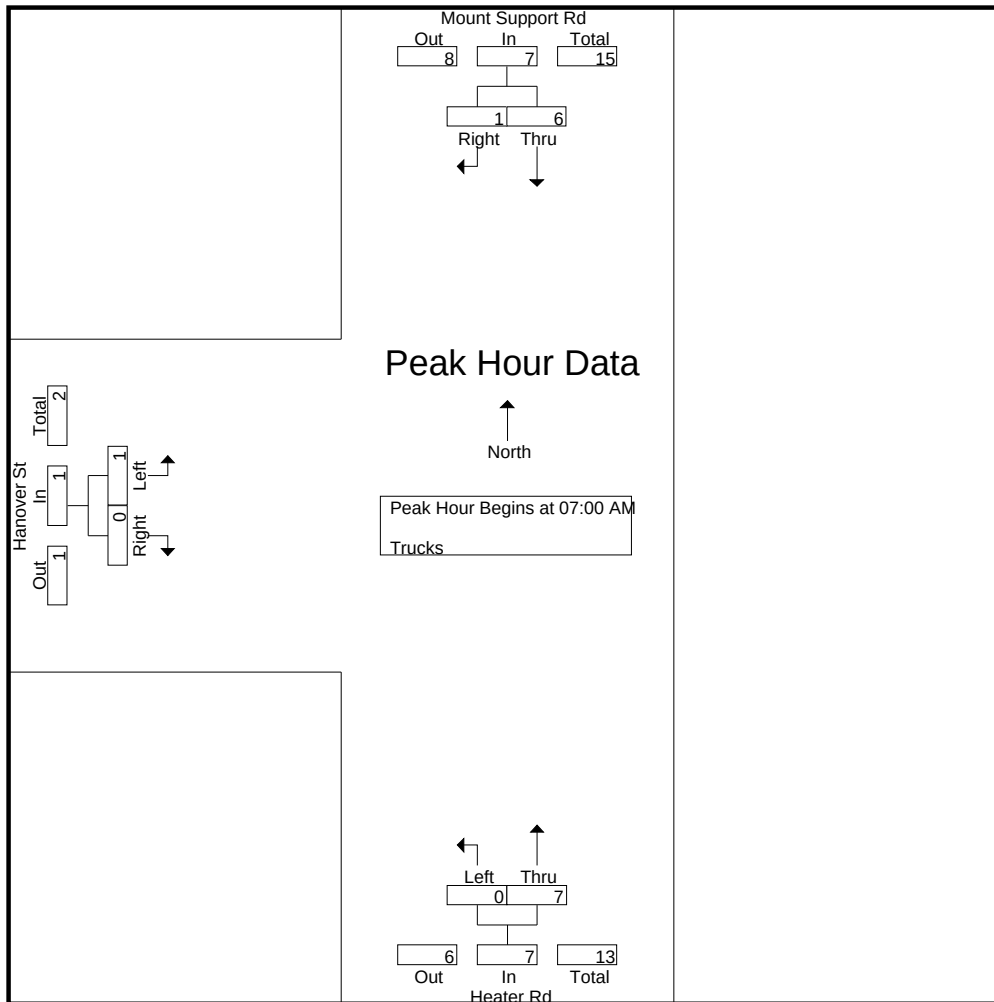
Groups Printed- Trucks

	Mount Support Rd From North		Heater Rd From South		Hanover St From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	1	1	0	1	1	0	4
07:15 AM	1	0	0	2	0	0	3
07:30 AM	1	0	0	1	0	0	2
07:45 AM	3	0	0	3	0	0	6
Total	6	1	0	7	1	0	15
08:00 AM	0	0	0	1	0	0	1
08:15 AM	3	0	0	1	1	0	5
08:30 AM	2	0	0	1	0	0	3
08:45 AM	0	0	0	1	0	0	1
Total	5	0	0	4	1	0	10
Grand Total	11	1	0	11	2	0	25
Apprch %	91.7	8.3	0	100	100	0	
Total %	44	4	0	44	8	0	

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	1	1	2	0	1	1	1	0	1	4
07:15 AM	1	0	1	0	2	2	0	0	0	3
07:30 AM	1	0	1	0	1	1	0	0	0	2
07:45 AM	3	0	3	0	3	3	0	0	0	6
Total Volume	6	1	7	0	7	7	1	0	1	15
% App. Total	85.7	14.3		0	100		100	0		
PHF	.500	.250	.583	.000	.583	.583	.250	.000	.250	.625

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
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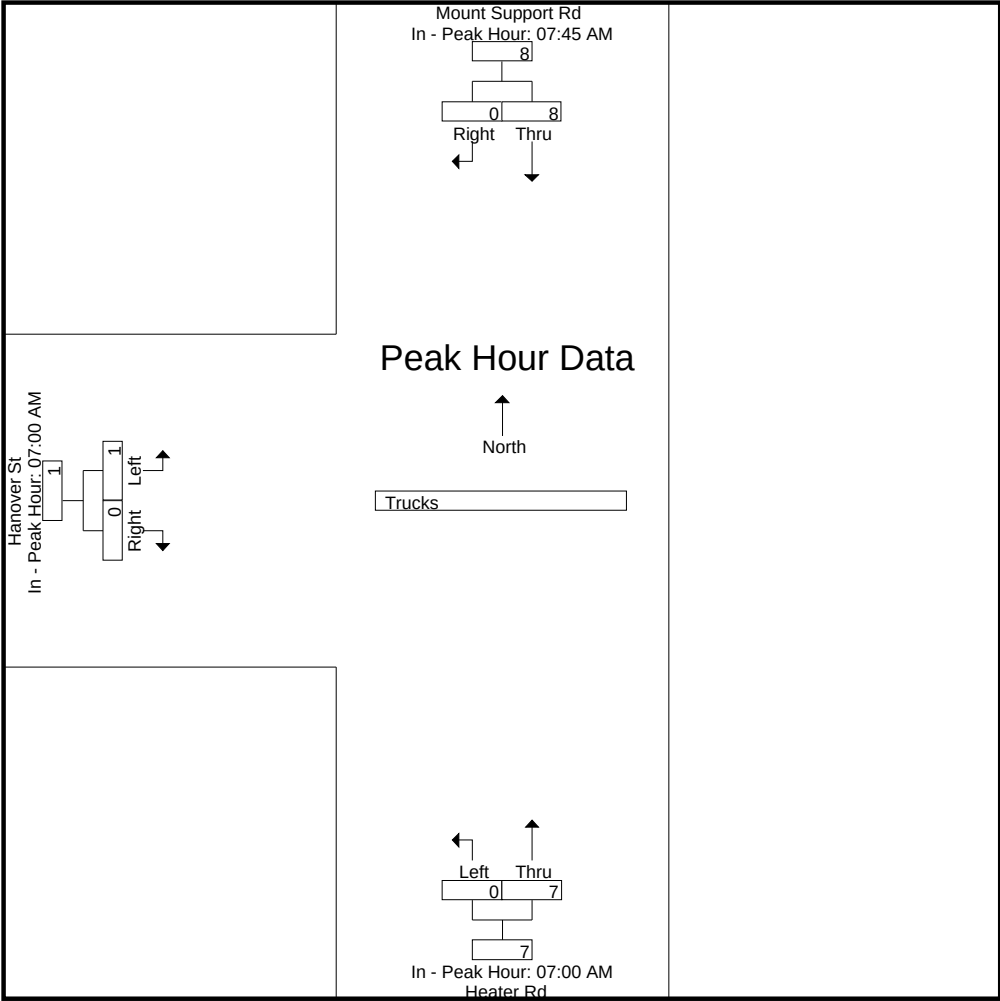


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			07:00 AM			07:00 AM		
+0 mins.	3	0	3	0	1	1	1	0	1
+15 mins.	0	0	0	0	2	2	0	0	0
+30 mins.	3	0	3	0	1	1	0	0	0
+45 mins.	2	0	2	0	3	3	0	0	0
Total Volume	8	0	8	0	7	7	1	0	1
% App. Total	100	0		0	100		100	0	
PHF	.667	.000	.667	.000	.583	.583	.250	.000	.250

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
Page No : 10

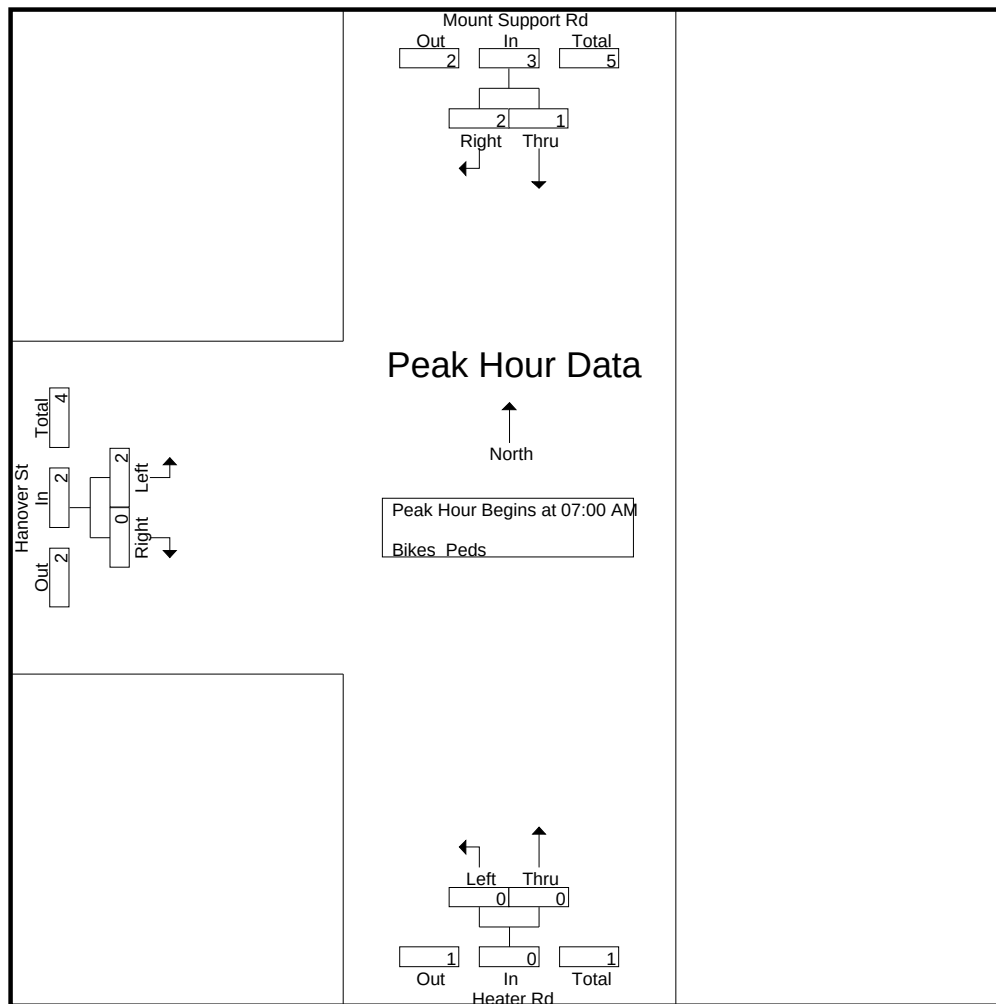
Groups Printed- Bikes Peds

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds			
07:00 AM	0	0	1	0	0	0	0	0	1	2	0	2
07:15 AM	0	1	3	0	0	0	1	0	0	3	2	5
07:30 AM	0	0	0	0	0	1	0	0	0	1	0	1
07:45 AM	1	1	5	0	0	0	1	0	0	5	3	8
Total	1	2	9	0	0	1	2	0	1	11	5	16
08:00 AM	0	0	0	0	0	0	0	0	1	1	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	2	0	0	0	0	0	1	3	0	3
Total	0	0	2	0	0	0	0	0	2	4	0	4
Grand Total	1	2	11	0	0	1	2	0	3	15	5	20
Apprch %	33.3	66.7		0	0		100	0				
Total %	20	40		0	0		40	0		75	25	

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	1	0	1	2
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	1	2	0	0	0	1	0	1	3
Total Volume	1	2	3	0	0	0	2	0	2	5
% App. Total	33.3	66.7		0	0		100	0		
PHF	.250	.500	.375	.000	.000	.000	.500	.000	.500	.417

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
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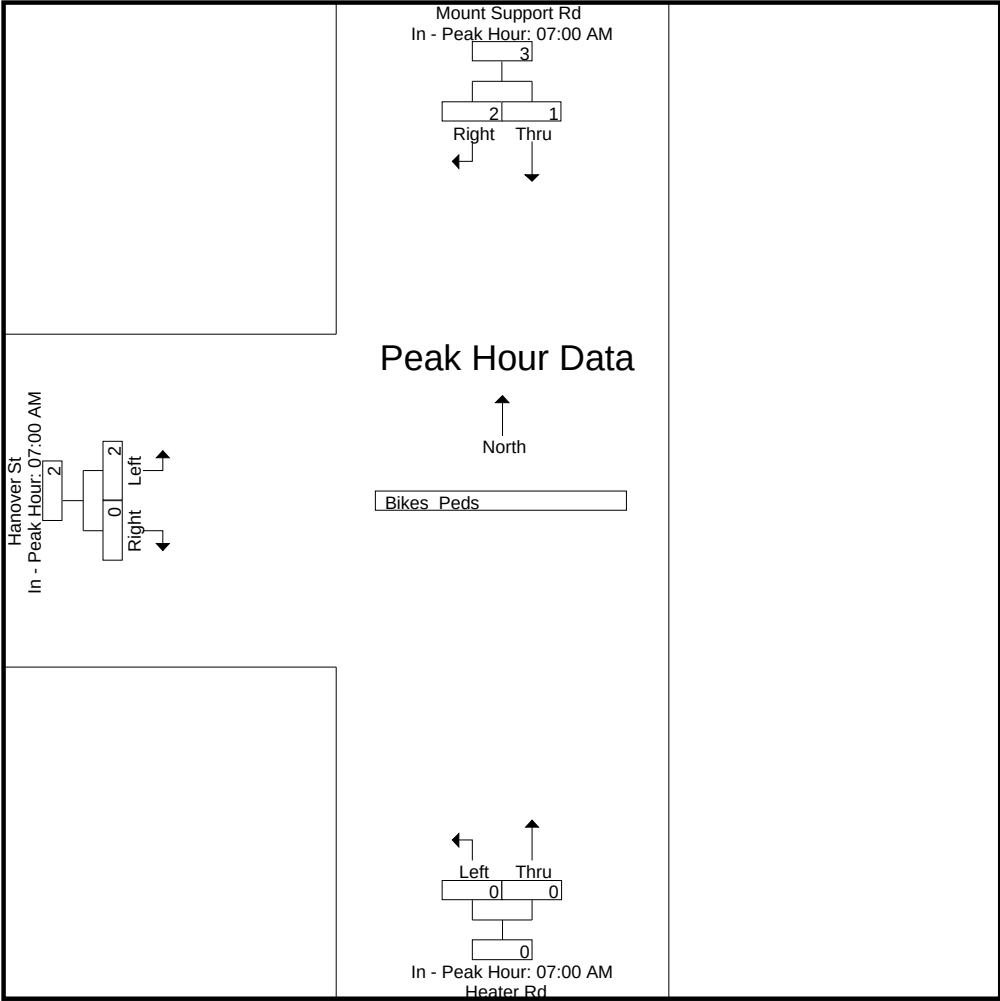


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	1	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	1	1	2	0	0	0	1	0	1
Total Volume	1	2	3	0	0	0	2	0	2
% App. Total	33.3	66.7		0	0		100	0	
PHF	.250	.500	.375	.000	.000	.000	.500	.000	.500

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
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Groups Printed- Cars - Trucks

	Mount Support Rd From North		Heater Rd From South		Hanover St From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
02:00 PM	28	4	0	12	6	0	50
02:15 PM	24	1	0	25	3	0	53
02:30 PM	43	3	0	17	1	0	64
02:45 PM	31	6	0	14	4	0	55
Total	126	14	0	68	14	0	222
03:00 PM	40	4	0	21	8	0	73
03:15 PM	36	1	0	19	8	1	65
03:30 PM	65	5	1	22	3	0	96
03:45 PM	42	7	0	22	1	0	72
Total	183	17	1	84	20	1	306
04:00 PM	63	8	0	14	5	0	90
04:15 PM	64	9	1	17	3	0	94
04:30 PM	51	4	1	24	1	0	81
04:45 PM	43	9	0	26	3	1	82
Total	221	30	2	81	12	1	347
05:00 PM	83	10	0	27	3	0	123
05:15 PM	75	5	0	27	1	0	108
05:30 PM	49	6	0	18	2	1	76
05:45 PM	26	3	0	20	3	0	52
Total	233	24	0	92	9	1	359
Grand Total	763	85	3	325	55	3	1234
Apprch %	90	10	0.9	99.1	94.8	5.2	
Total %	61.8	6.9	0.2	26.3	4.5	0.2	
Cars	737	85	3	309	52	3	1189
% Cars	96.6	100	100	95.1	94.5	100	96.4
Trucks	26	0	0	16	3	0	45
% Trucks	3.4	0	0	4.9	5.5	0	3.6

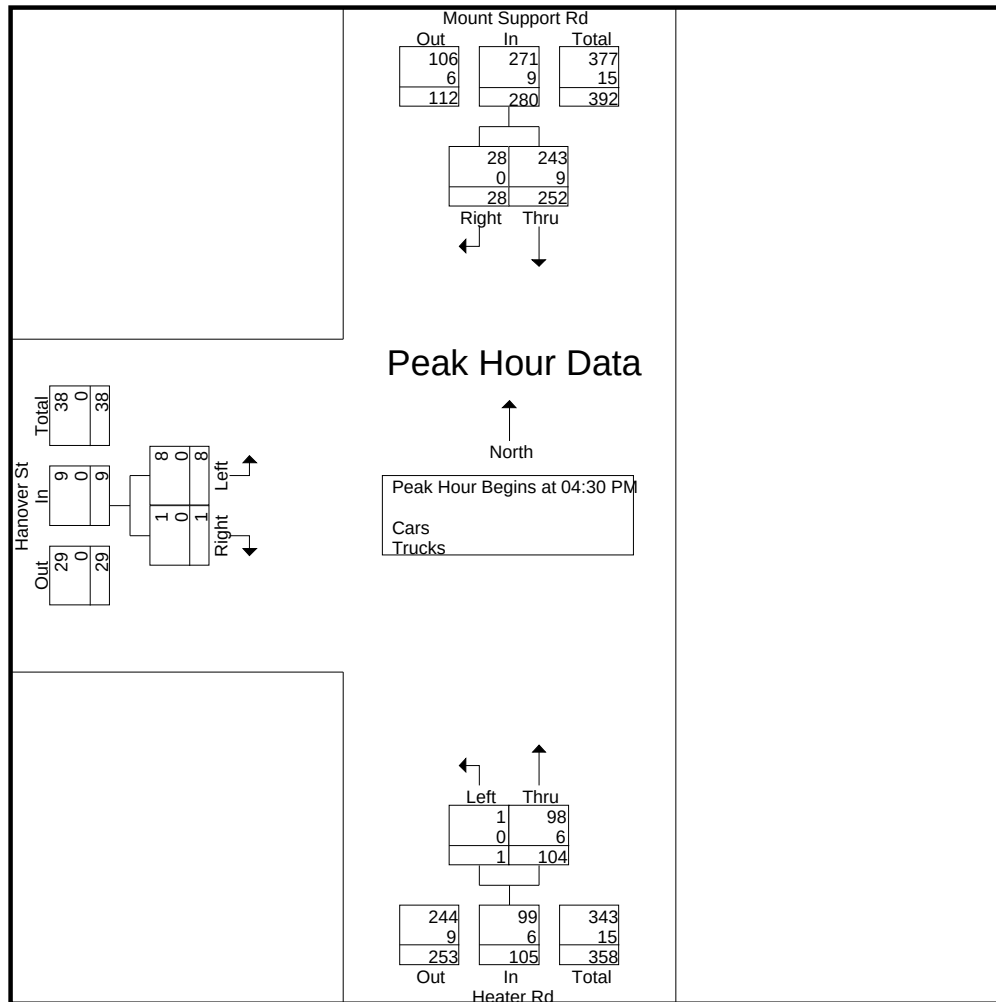
	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	51	4	55	1	24	25	1	0	1	81
04:45 PM	43	9	52	0	26	26	3	1	4	82
05:00 PM	83	10	93	0	27	27	3	0	3	123
05:15 PM	75	5	80	0	27	27	1	0	1	108
Total Volume	252	28	280	1	104	105	8	1	9	394
% App. Total	90	10		1	99		88.9	11.1		
PHF	.759	.700	.753	.250	.963	.972	.667	.250	.563	.801
Cars	243	28	271	1	98	99	8	1	9	379
% Cars	96.4	100	96.8	100	94.2	94.3	100	100	100	96.2
Trucks	9	0	9	0	6	6	0	0	0	15
% Trucks	3.6	0	3.2	0	5.8	5.7	0	0	0	3.8

Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
 E/W Street : Hanover Street
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933003
 Site Code : 52933003
 Start Date : 11/10/2022
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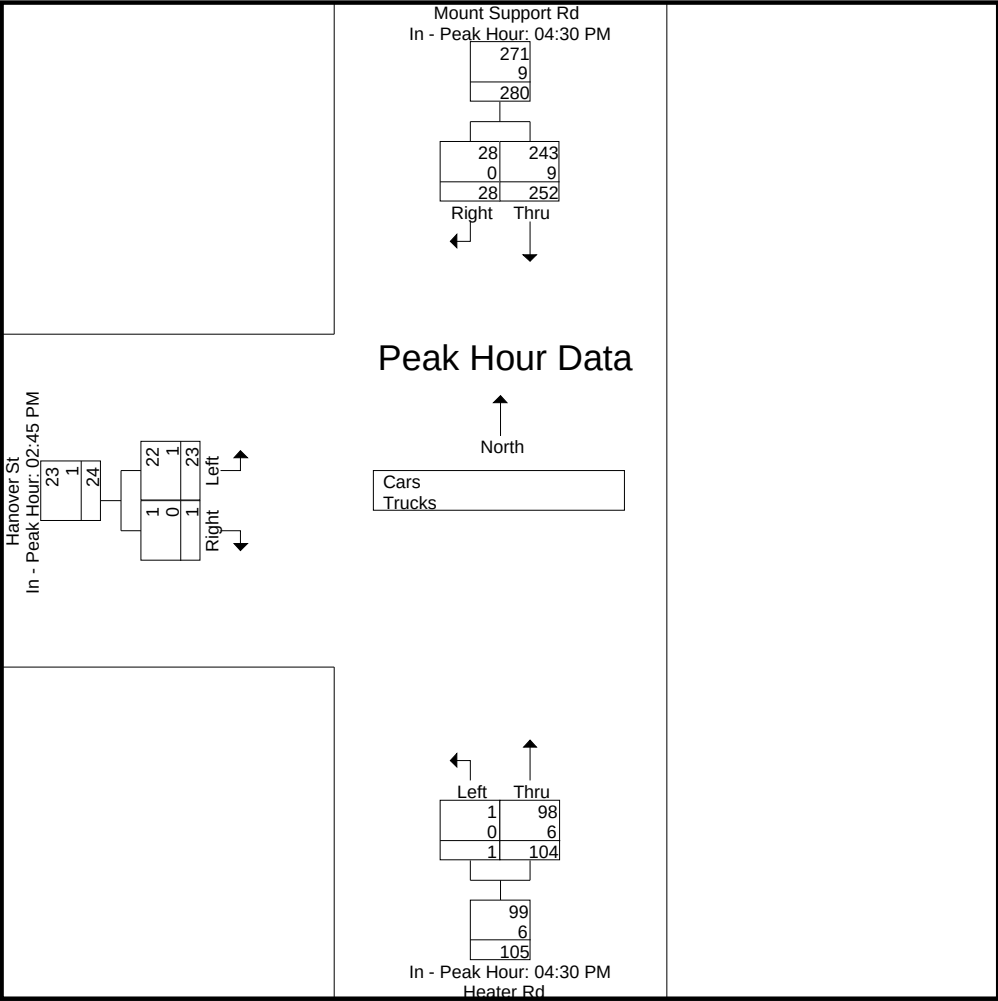


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			02:45 PM		
+0 mins.	51	4	55	1	24	25	4	0	4
+15 mins.	43	9	52	0	26	26	8	0	8
+30 mins.	83	10	93	0	27	27	8	1	9
+45 mins.	75	5	80	0	27	27	3	0	3
Total Volume	252	28	280	1	104	105	23	1	24
% App. Total	90	10		1	99		95.8	4.2	
PHF	.759	.700	.753	.250	.963	.972	.719	.250	.667
Cars	243	28	271	1	98	99	22	1	23
% Cars	96.4	100	96.8	100	94.2	94.3	95.7	100	95.8
Trucks	9	0	9	0	6	6	1	0	1
% Trucks	3.6	0	3.2	0	5.8	5.7	4.3	0	4.2

N/S Street : Mount Support Rd/Heater Rd
 E/W Street : Hanover Street
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933003
 Site Code : 52933003
 Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
Page No : 4

Groups Printed- Cars

	Mount Support Rd From North		Heater Rd From South		Hanover St From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
02:00 PM	27	4	0	12	6	0	49
02:15 PM	23	1	0	23	2	0	49
02:30 PM	41	3	0	16	0	0	60
02:45 PM	29	6	0	13	4	0	52
Total	120	14	0	64	12	0	210
03:00 PM	38	4	0	21	8	0	71
03:15 PM	35	1	0	18	7	1	62
03:30 PM	63	5	1	21	3	0	93
03:45 PM	42	7	0	21	1	0	71
Total	178	17	1	81	19	1	297
04:00 PM	60	8	0	13	5	0	86
04:15 PM	63	9	1	16	3	0	92
04:30 PM	50	4	1	23	1	0	79
04:45 PM	41	9	0	23	3	1	77
Total	214	30	2	75	12	1	334
05:00 PM	83	10	0	25	3	0	121
05:15 PM	69	5	0	27	1	0	102
05:30 PM	48	6	0	18	2	1	75
05:45 PM	25	3	0	19	3	0	50
Total	225	24	0	89	9	1	348
Grand Total	737	85	3	309	52	3	1189
Apprch %	89.7	10.3	1	99	94.5	5.5	
Total %	62	7.1	0.3	26	4.4	0.3	

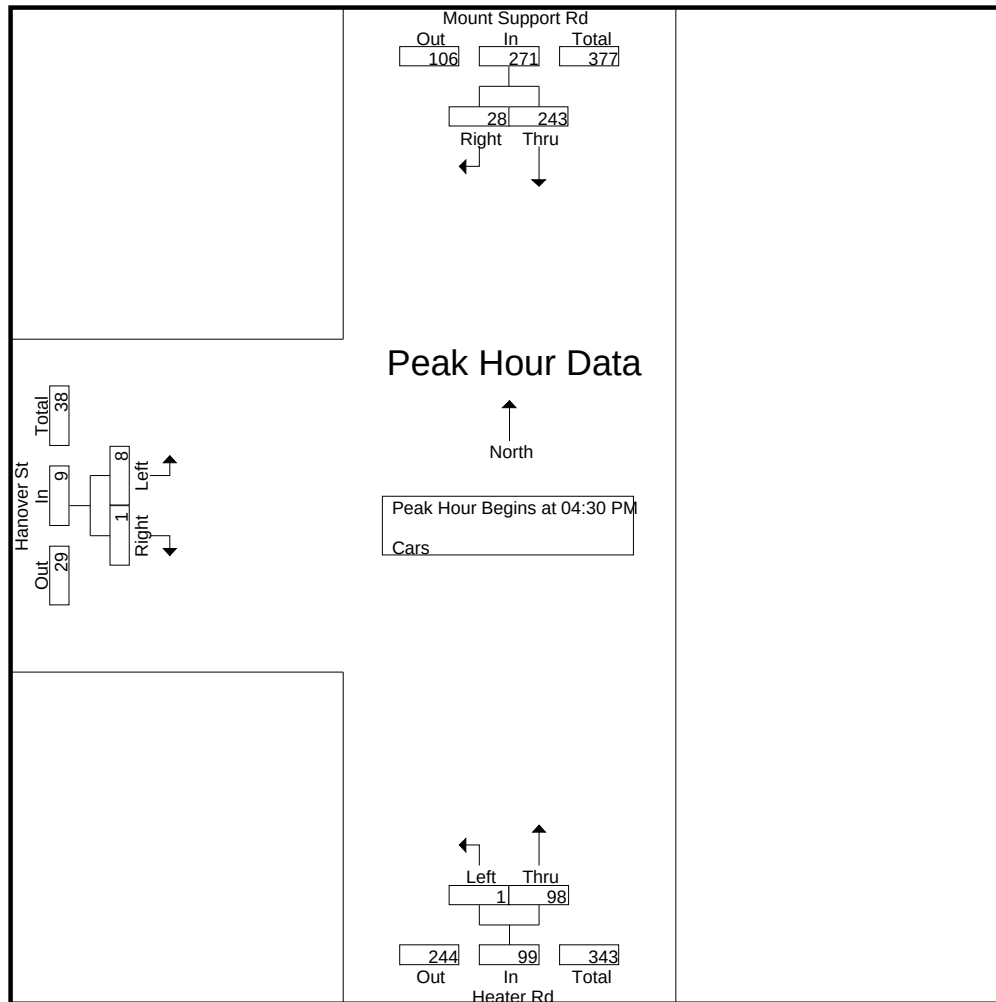
	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	50	4	54	1	23	24	1	0	1	79
04:45 PM	41	9	50	0	23	23	3	1	4	77
05:00 PM	83	10	93	0	25	25	3	0	3	121
05:15 PM	69	5	74	0	27	27	1	0	1	102
Total Volume	243	28	271	1	98	99	8	1	9	379
% App. Total	89.7	10.3		1	99		88.9	11.1		
PHF	.732	.700	.728	.250	.907	.917	.667	.250	.563	.783

Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
 E/W Street : Hanover Street
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933003
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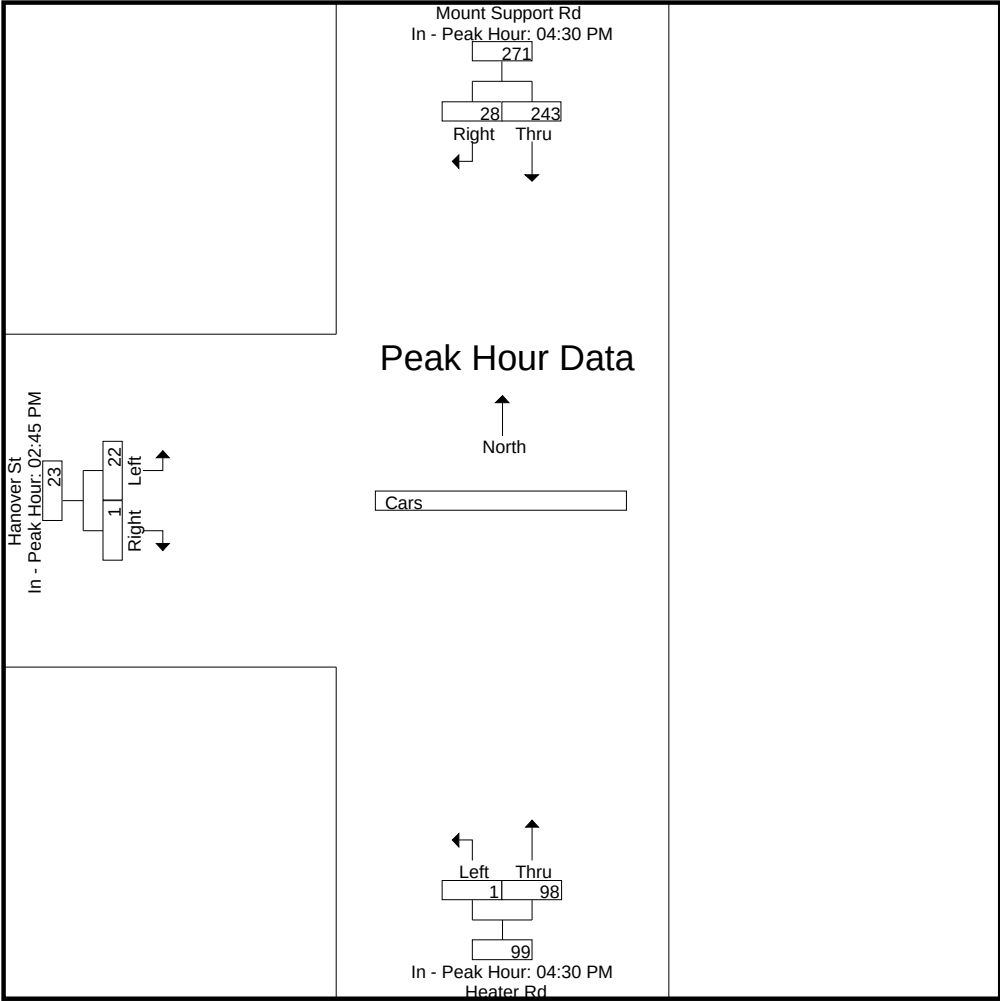


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			02:45 PM		
+0 mins.	50	4	54	1	23	24	4	0	4
+15 mins.	41	9	50	0	23	23	8	0	8
+30 mins.	83	10	93	0	25	25	7	1	8
+45 mins.	69	5	74	0	27	27	3	0	3
Total Volume	243	28	271	1	98	99	22	1	23
% App. Total	89.7	10.3		1	99		95.7	4.3	
PHF	.732	.700	.728	.250	.907	.917	.688	.250	.719

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
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Accurate Counts

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N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
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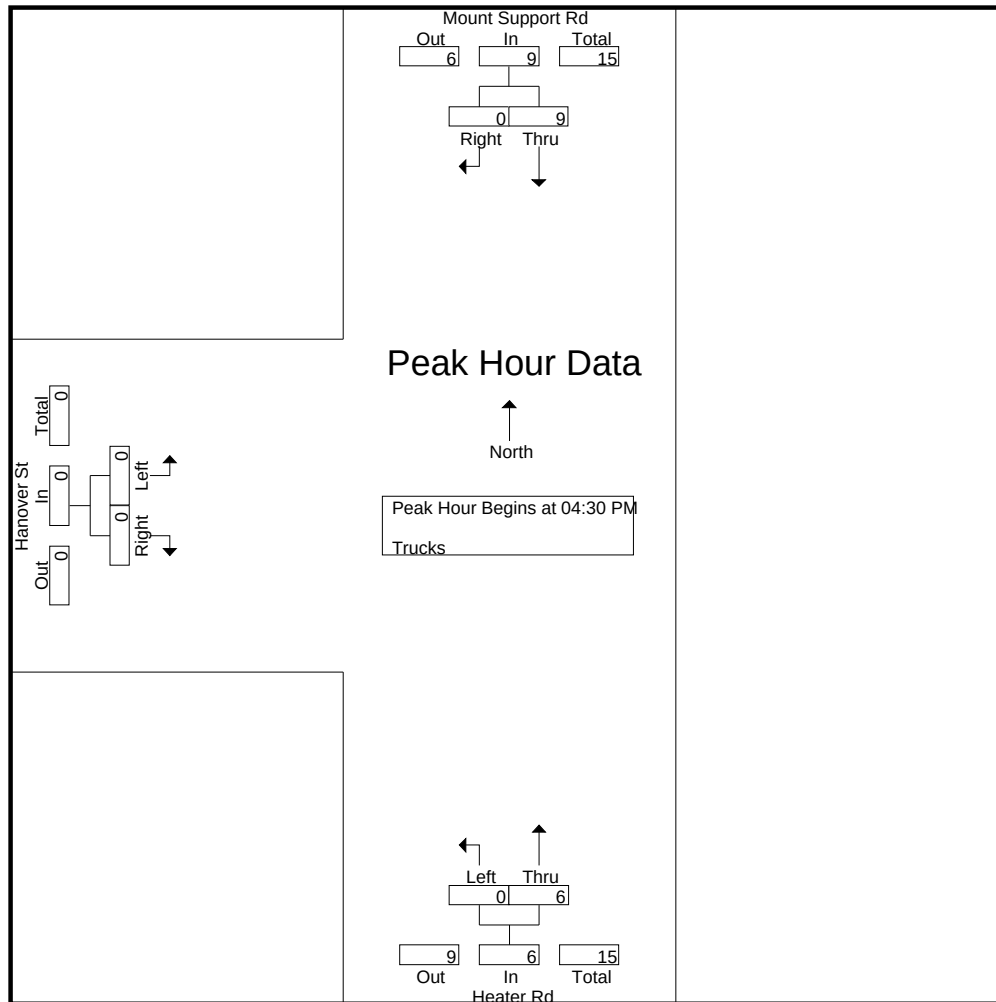
Groups Printed- Trucks

	Mount Support Rd From North		Heater Rd From South		Hanover St From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
02:00 PM	1	0	0	0	0	0	1
02:15 PM	1	0	0	2	1	0	4
02:30 PM	2	0	0	1	1	0	4
02:45 PM	2	0	0	1	0	0	3
Total	6	0	0	4	2	0	12
03:00 PM	2	0	0	0	0	0	2
03:15 PM	1	0	0	1	1	0	3
03:30 PM	2	0	0	1	0	0	3
03:45 PM	0	0	0	1	0	0	1
Total	5	0	0	3	1	0	9
04:00 PM	3	0	0	1	0	0	4
04:15 PM	1	0	0	1	0	0	2
04:30 PM	1	0	0	1	0	0	2
04:45 PM	2	0	0	3	0	0	5
Total	7	0	0	6	0	0	13
05:00 PM	0	0	0	2	0	0	2
05:15 PM	6	0	0	0	0	0	6
05:30 PM	1	0	0	0	0	0	1
05:45 PM	1	0	0	1	0	0	2
Total	8	0	0	3	0	0	11
Grand Total	26	0	0	16	3	0	45
Apprch %	100	0	0	100	100	0	
Total %	57.8	0	0	35.6	6.7	0	

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	1	0	1	0	1	1	0	0	0	2
04:45 PM	2	0	2	0	3	3	0	0	0	5
05:00 PM	0	0	0	0	2	2	0	0	0	2
05:15 PM	6	0	6	0	0	0	0	0	0	6
Total Volume	9	0	9	0	6	6	0	0	0	15
% App. Total	100	0		0	100		0	0		
PHF	.375	.000	.375	.000	.500	.500	.000	.000	.000	.625

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
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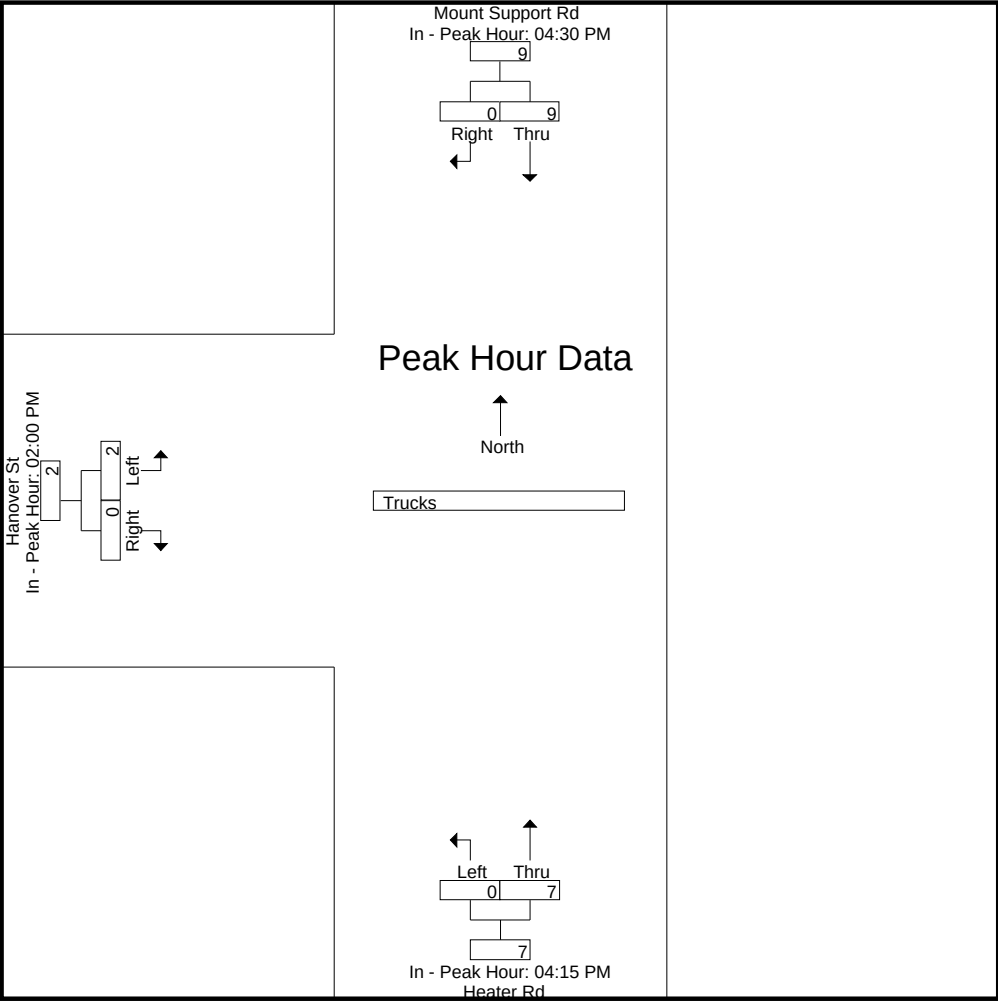


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:15 PM			02:00 PM		
+0 mins.	1	0	1	0	1	1	0	0	0
+15 mins.	2	0	2	0	1	1	1	0	1
+30 mins.	0	0	0	0	3	3	1	0	1
+45 mins.	6	0	6	0	2	2	0	0	0
Total Volume	9	0	9	0	7	7	2	0	2
% App. Total	100	0		0	100		100	0	
PHF	.375	.000	.375	.000	.583	.583	.500	.000	.500

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
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Accurate Counts

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N/S Street : Mount Support Rd/Heater Rd

E/W Street : Hanover Street

City/State : Lebanon, NH

Weather : Clear

File Name : 52933003

Site Code : 52933003

Start Date : 11/10/2022

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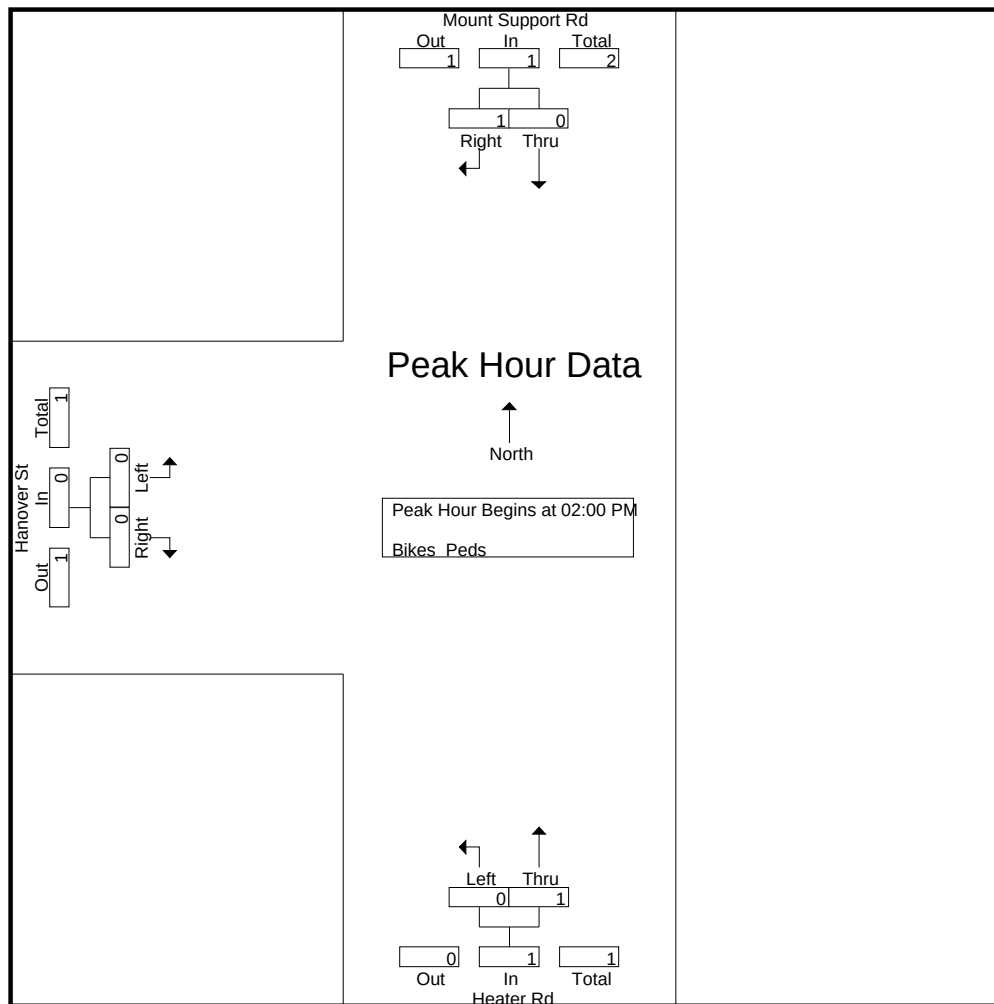
Groups Printed- Bikes Peds

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds			
02:00 PM	0	1	0	0	0	0	0	0	0	0	1	1
02:15 PM	0	0	0	0	1	0	0	0	0	0	1	1
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	2	0	0	0	0	0	0	2	0	2
Total	0	1	2	0	1	0	0	0	0	2	2	4
03:00 PM	0	1	0	0	0	0	0	0	0	0	1	1
03:15 PM	0	0	0	0	0	1	0	0	0	1	0	1
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	1	0	0	0	2	0	0	0	2	1	3
04:00 PM	1	0	1	0	1	0	0	0	0	1	2	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	0	0	1	0	1
Total	1	0	1	0	1	1	0	0	0	2	2	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	0	0	0	0	0	0	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	1	1
Grand Total	1	3	3	0	2	3	0	0	0	6	6	12
Apprch %	25	75		0	100		0	0				
Total %	16.7	50		0	33.3		0	0		50	50	

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	0	1	1	0	0	0	0	0	0	1
02:15 PM	0	0	0	0	1	1	0	0	0	1
02:30 PM	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	1	1	0	0	0	2
% App. Total	0	100		0	100		0	0		
PHF	.000	.250	.250	.000	.250	.250	.000	.000	.000	.500

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
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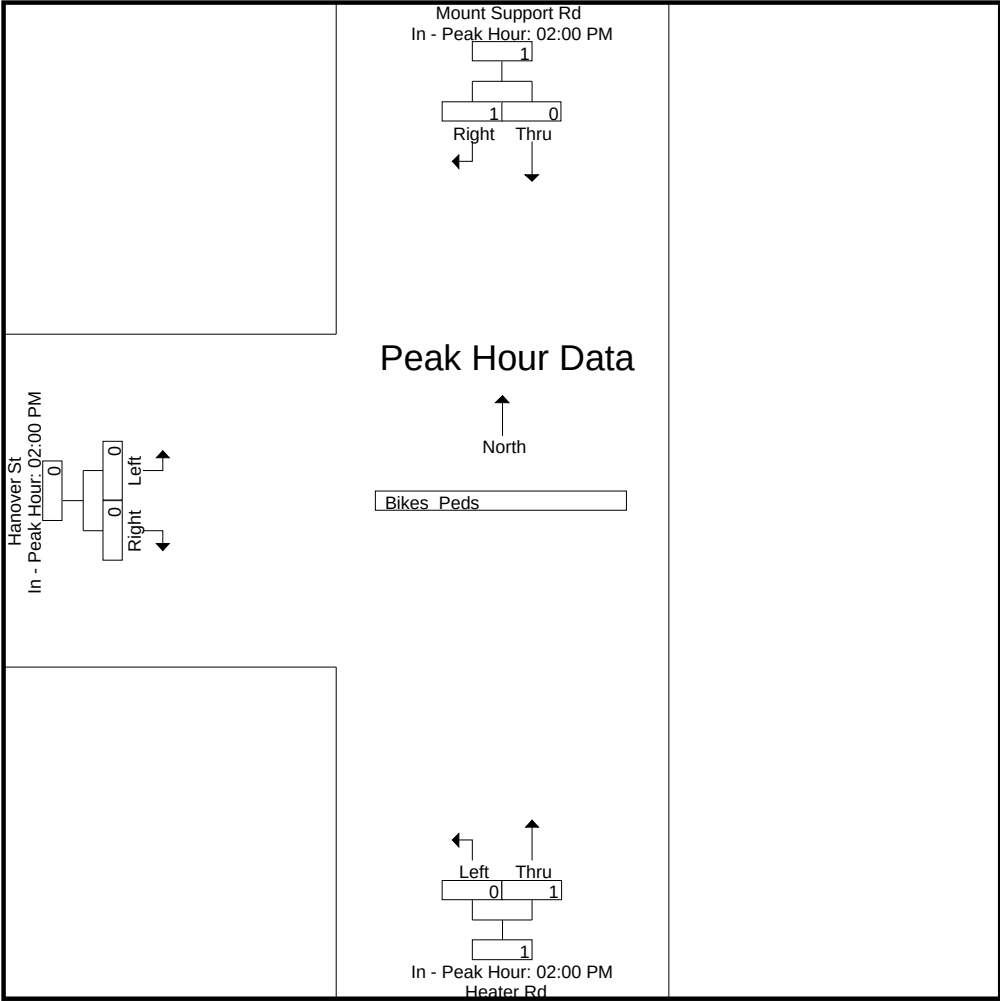


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			02:00 PM		
+0 mins.	0	1	1	0	0	0	0	0	0
+15 mins.	0	0	0	0	1	1	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	1	1	0	0	0
% App. Total	0	100		0	100		0	0	
PHF	.000	.250	.250	.000	.250	.250	.000	.000	.000

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 52933003
Site Code : 52933003
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S3
Site Code : 52933003
Start Date : 11/12/2022
Page No : 1

Groups Printed- Cars - Trucks

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right		Left	Thru		Left	Right		Int. Total
11:00 AM	11	1		0	16		1	0		29
11:15 AM	16	1		0	20		3	0		40
11:30 AM	15	3		0	13		3	0		34
11:45 AM	17	5		0	5		0	0		27
Total	59	10		0	54		7	0		130
12:00 PM	18	3		0	13		3	0		37
12:15 PM	12	3		1	9		2	0		27
12:30 PM	18	0		0	10		3	0		31
12:45 PM	11	0		0	14		2	0		27
Total	59	6		1	46		10	0		122
Grand Total	118	16		1	100		17	0		252
Apprch %	88.1	11.9		1	99		100	0		
Total %	46.8	6.3		0.4	39.7		6.7	0		
Cars	118	16		1	100		17	0		252
% Cars	100	100		100	100		100	0		100
Trucks	0	0		0	0		0	0		0
% Trucks	0	0		0	0		0	0		0

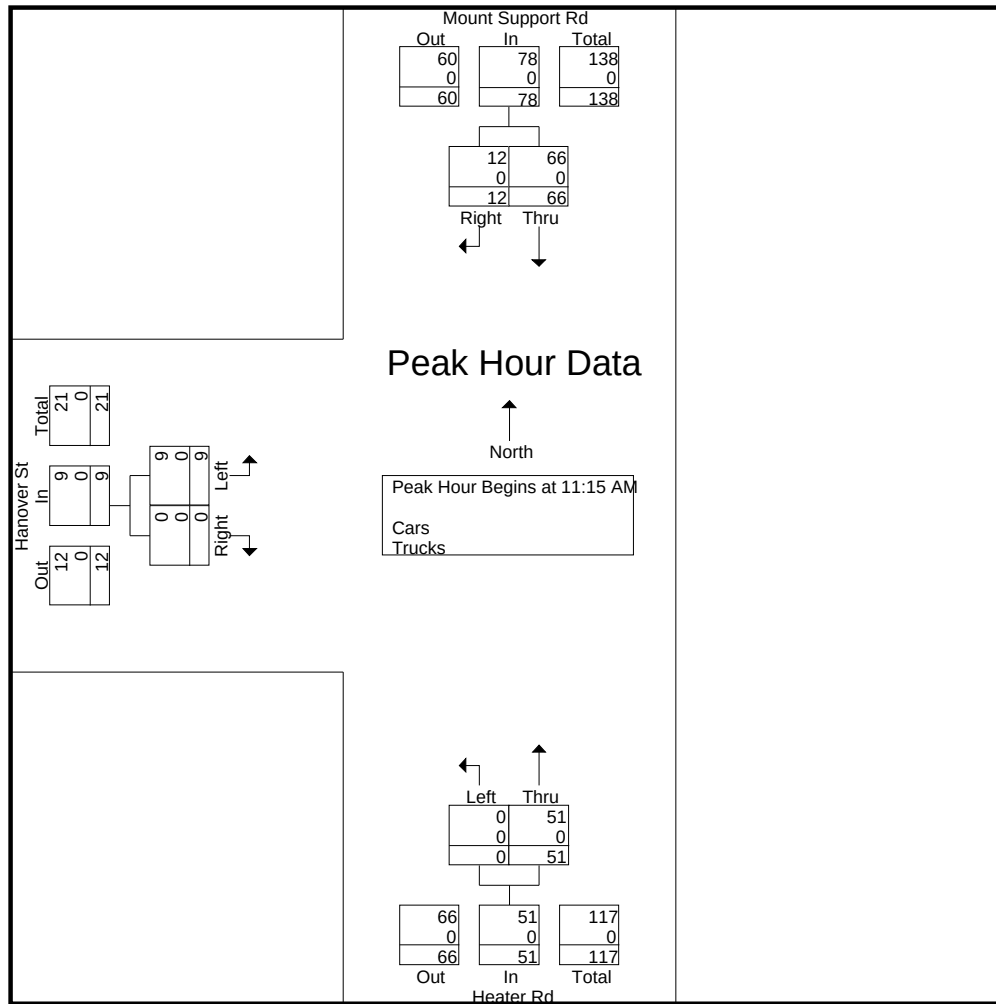
	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	16	1	17	0	20	20	3	0	3	40
11:30 AM	15	3	18	0	13	13	3	0	3	34
11:45 AM	17	5	22	0	5	5	0	0	0	27
12:00 PM	18	3	21	0	13	13	3	0	3	37
Total Volume	66	12	78	0	51	51	9	0	9	138
% App. Total	84.6	15.4		0	100		100	0		
PHF	.917	.600	.886	.000	.638	.638	.750	.000	.750	.863
Cars	66	12	78	0	51	51	9	0	9	138
% Cars	100	100	100	0	100	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
 E/W Street : Hanover Street
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S3
 Site Code : 52933003
 Start Date : 11/12/2022
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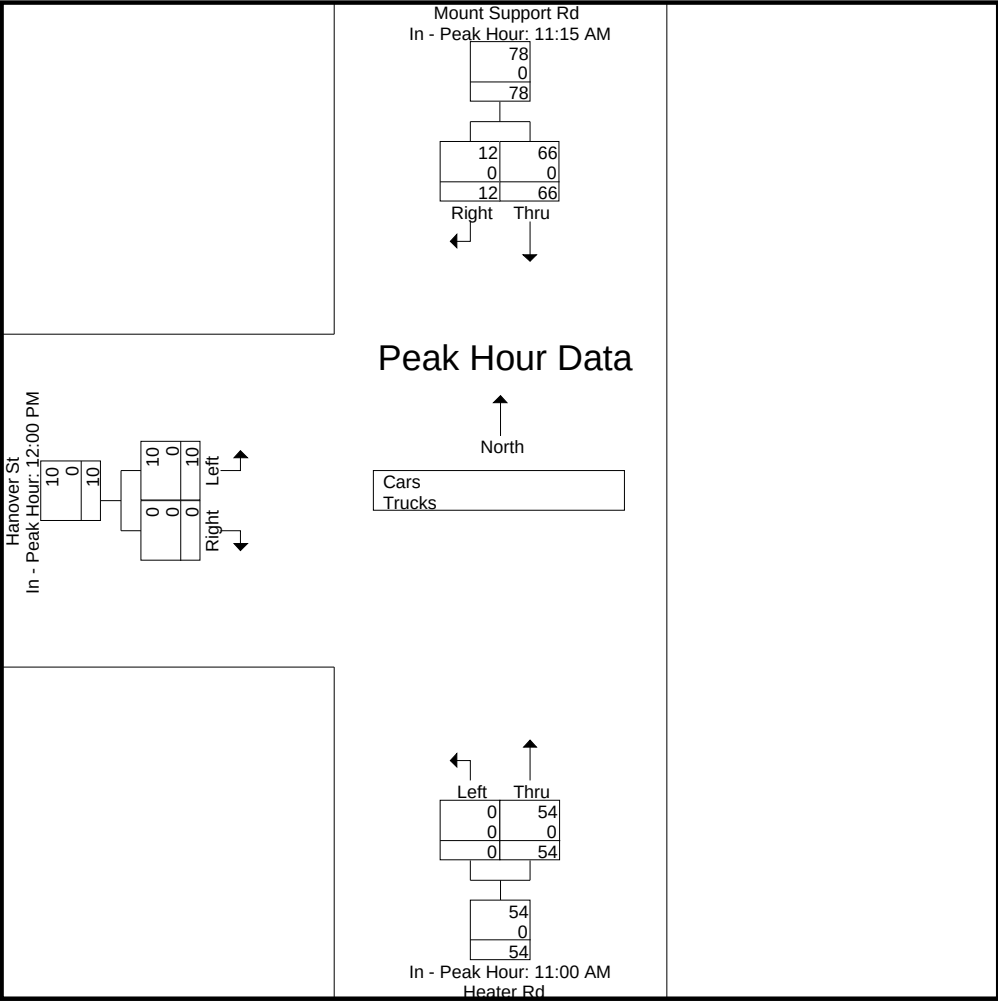


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	11:15 AM			11:00 AM			12:00 PM		
+0 mins.	16	1	17	0	16	16	3	0	3
+15 mins.	15	3	18	0	20	20	2	0	2
+30 mins.	17	5	22	0	13	13	3	0	3
+45 mins.	18	3	21	0	5	5	2	0	2
Total Volume	66	12	78	0	54	54	10	0	10
% App. Total	84.6	15.4		0	100		100	0	
PHF	.917	.600	.886	.000	.675	.675	.833	.000	.833
Cars	66	12	78	0	54	54	10	0	10
% Cars	100	100	100	0	100	100	100	0	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0

N/S Street : Mount Support Rd/Heater Rd
 E/W Street : Hanover Street
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S3
 Site Code : 52933003
 Start Date : 11/12/2022
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Accurate Counts
978-664-2565

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S3
Site Code : 52933003
Start Date : 11/12/2022
Page No : 4

Groups Printed- Cars

	Mount Support Rd From North		Heater Rd From South		Hanover St From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
11:00 AM	11	1	0	16	1	0	29
11:15 AM	16	1	0	20	3	0	40
11:30 AM	15	3	0	13	3	0	34
11:45 AM	17	5	0	5	0	0	27
Total	59	10	0	54	7	0	130
12:00 PM	18	3	0	13	3	0	37
12:15 PM	12	3	1	9	2	0	27
12:30 PM	18	0	0	10	3	0	31
12:45 PM	11	0	0	14	2	0	27
Total	59	6	1	46	10	0	122
Grand Total	118	16	1	100	17	0	252
Apprch %	88.1	11.9	1	99	100	0	
Total %	46.8	6.3	0.4	39.7	6.7	0	

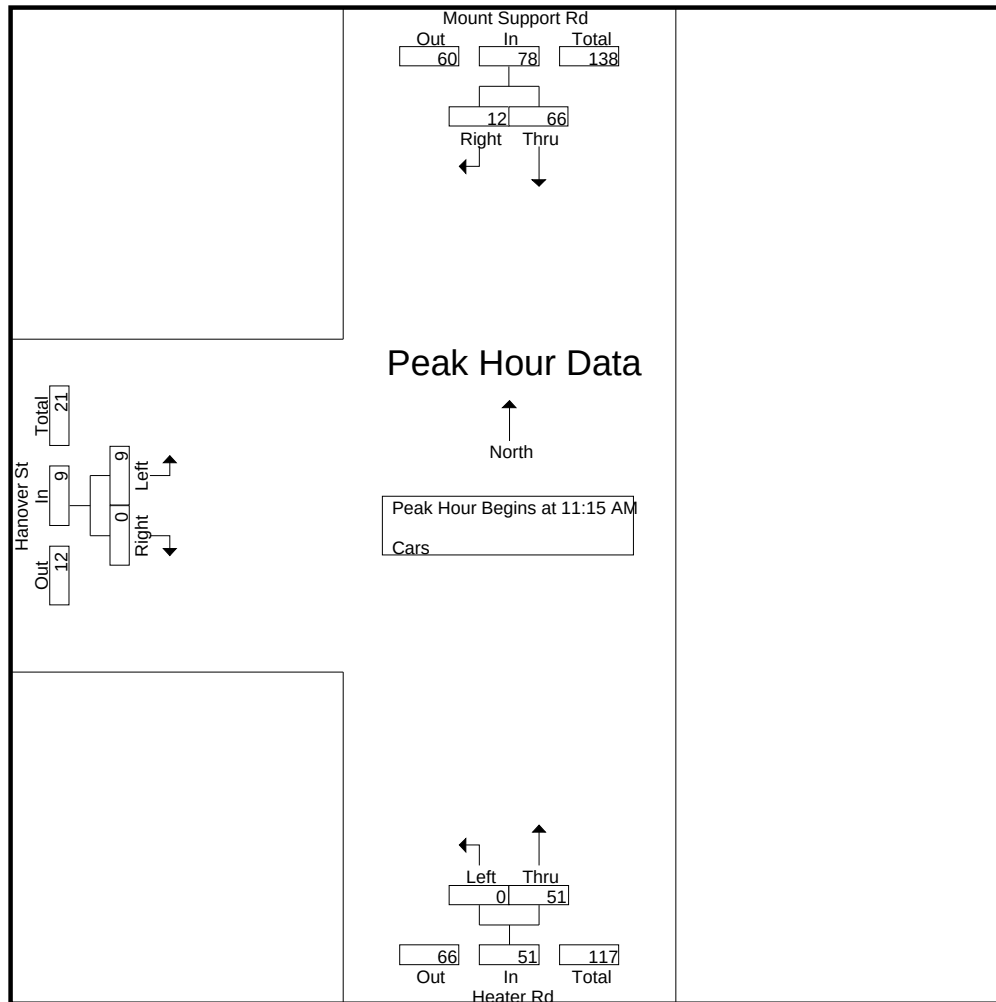
	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	16	1	17	0	20	20	3	0	3	40
11:30 AM	15	3	18	0	13	13	3	0	3	34
11:45 AM	17	5	22	0	5	5	0	0	0	27
12:00 PM	18	3	21	0	13	13	3	0	3	37
Total Volume	66	12	78	0	51	51	9	0	9	138
% App. Total	84.6	15.4		0	100		100	0		
PHF	.917	.600	.886	.000	.638	.638	.750	.000	.750	.863

Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd
 E/W Street : Hanover Street
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S3
 Site Code : 52933003
 Start Date : 11/12/2022
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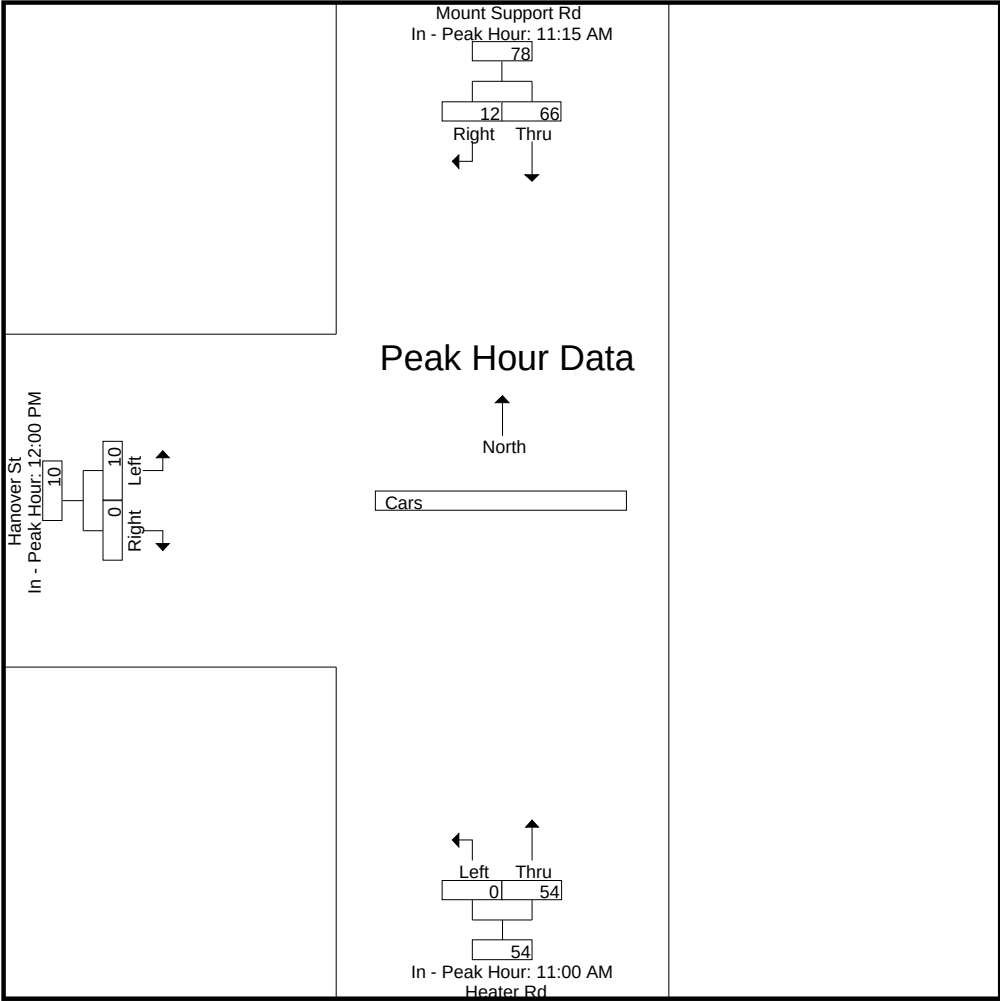


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	11:15 AM			11:00 AM			12:00 PM		
+0 mins.	16	1	17	0	16	16	3	0	3
+15 mins.	15	3	18	0	20	20	2	0	2
+30 mins.	17	5	22	0	13	13	3	0	3
+45 mins.	18	3	21	0	5	5	2	0	2
Total Volume	66	12	78	0	54	54	10	0	10
% App. Total	84.6	15.4		0	100		100	0	
PHF	.917	.600	.886	.000	.675	.675	.833	.000	.833

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S3
Site Code : 52933003
Start Date : 11/12/2022
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Accurate Counts

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N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S3
Site Code : 52933003
Start Date : 11/12/2022
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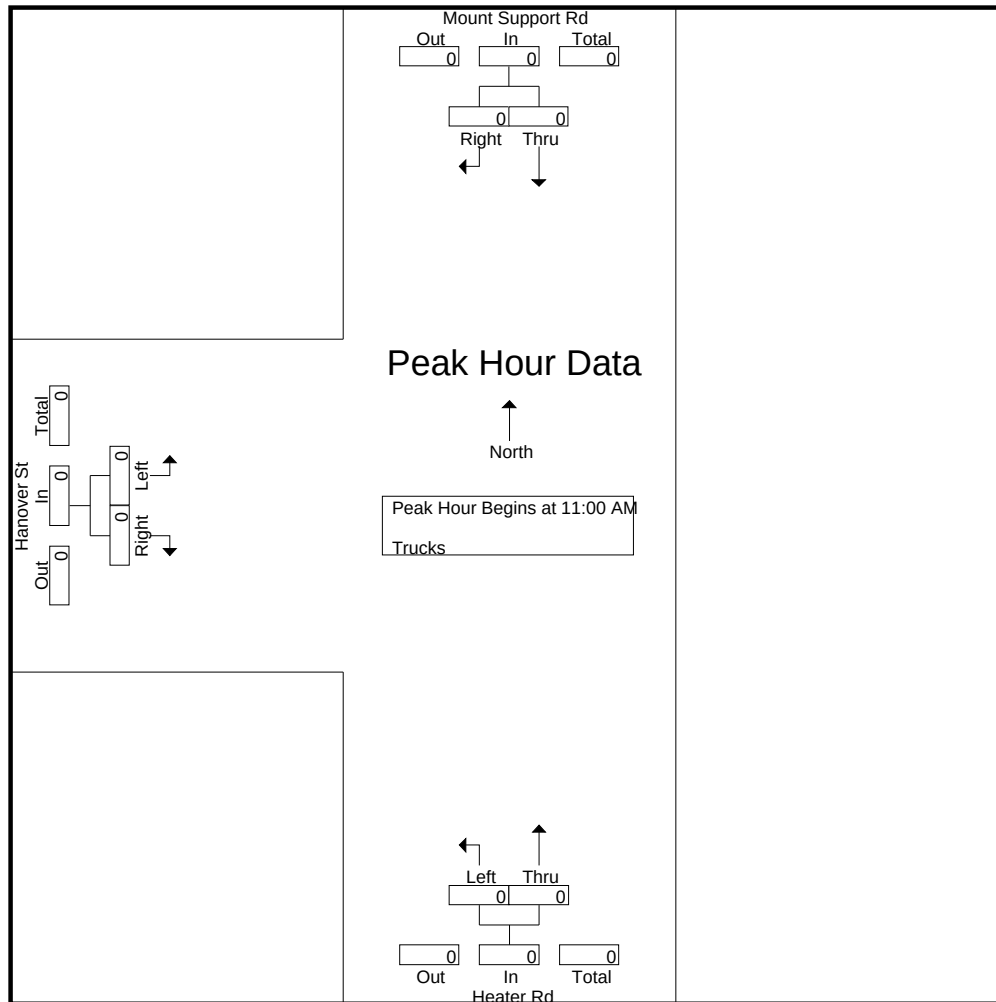
Groups Printed- Trucks

	Mount Support Rd From North		Heater Rd From South		Hanover St From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	
Total %							

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S3
Site Code : 52933003
Start Date : 11/12/2022
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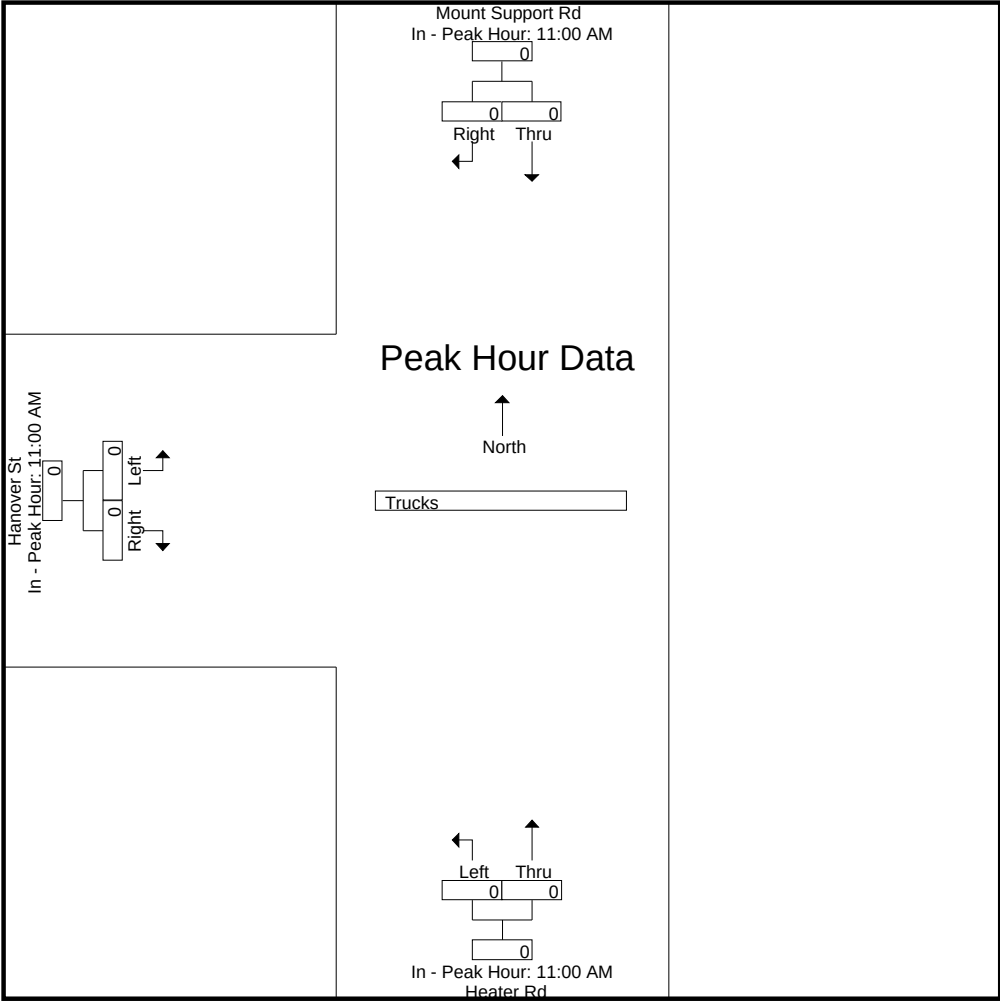


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S3
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Accurate Counts

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N/S Street : Mount Support Rd/Heater Rd

E/W Street : Hanover Street

City/State : Lebanon, NH

Weather : Clear

File Name : 529330S3

Site Code : 52933003

Start Date : 11/12/2022

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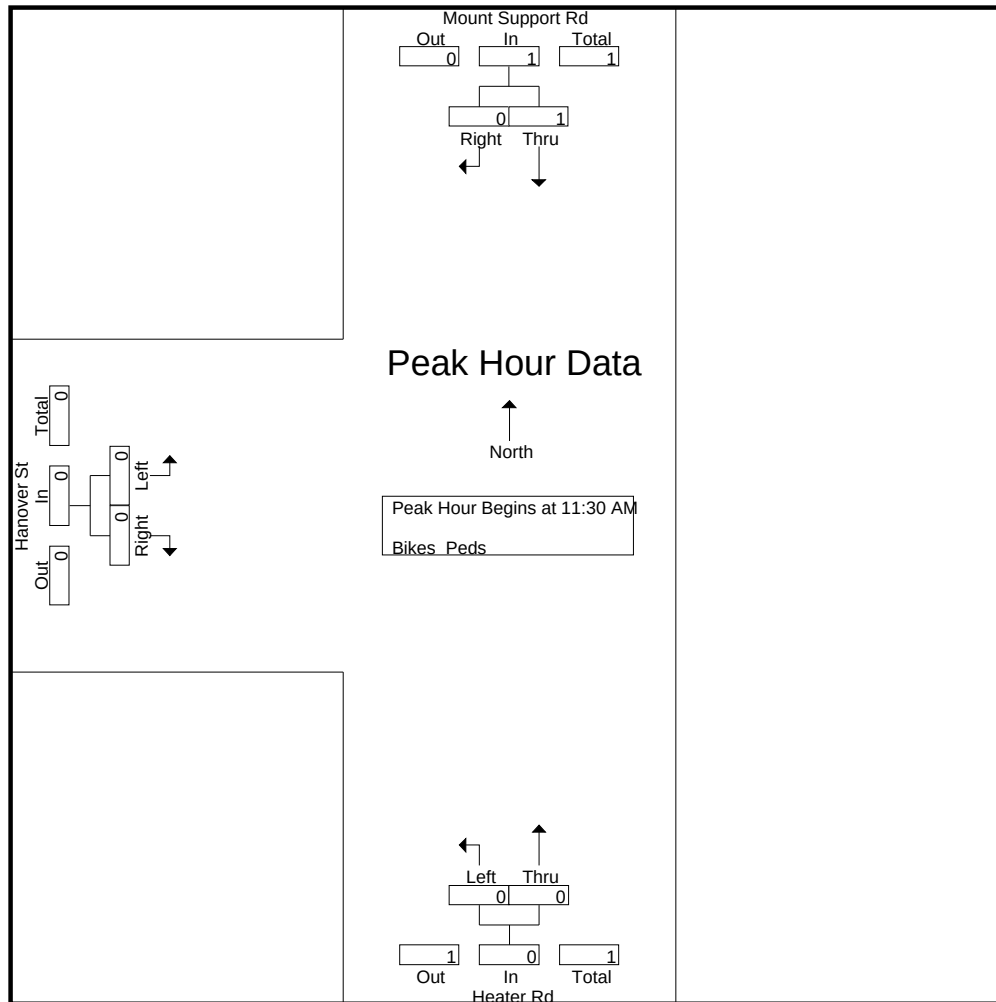
Groups Printed- Bikes Peds

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds			
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	3	3	0	3
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	3	3	0	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	1	0	0	0	0	0	0	0	0	0	1	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	1	0	0	0	0	0	0	1	0	1
Total	1	0	1	0	0	0	0	0	0	1	1	2
Grand Total	1	0	1	0	0	0	0	0	3	4	1	5
Apprch %	100	0		0	0		0	0				
Total %	100	0		0	0		0	0		80	20	

	Mount Support Rd From North			Heater Rd From South			Hanover St From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0
12:15 PM	1	0	1	0	0	0	0	0	0	1
Total Volume	1	0	1	0	0	0	0	0	0	1
% App. Total	100	0		0	0		0	0		
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S3
Site Code : 52933003
Start Date : 11/12/2022
Page No : 11

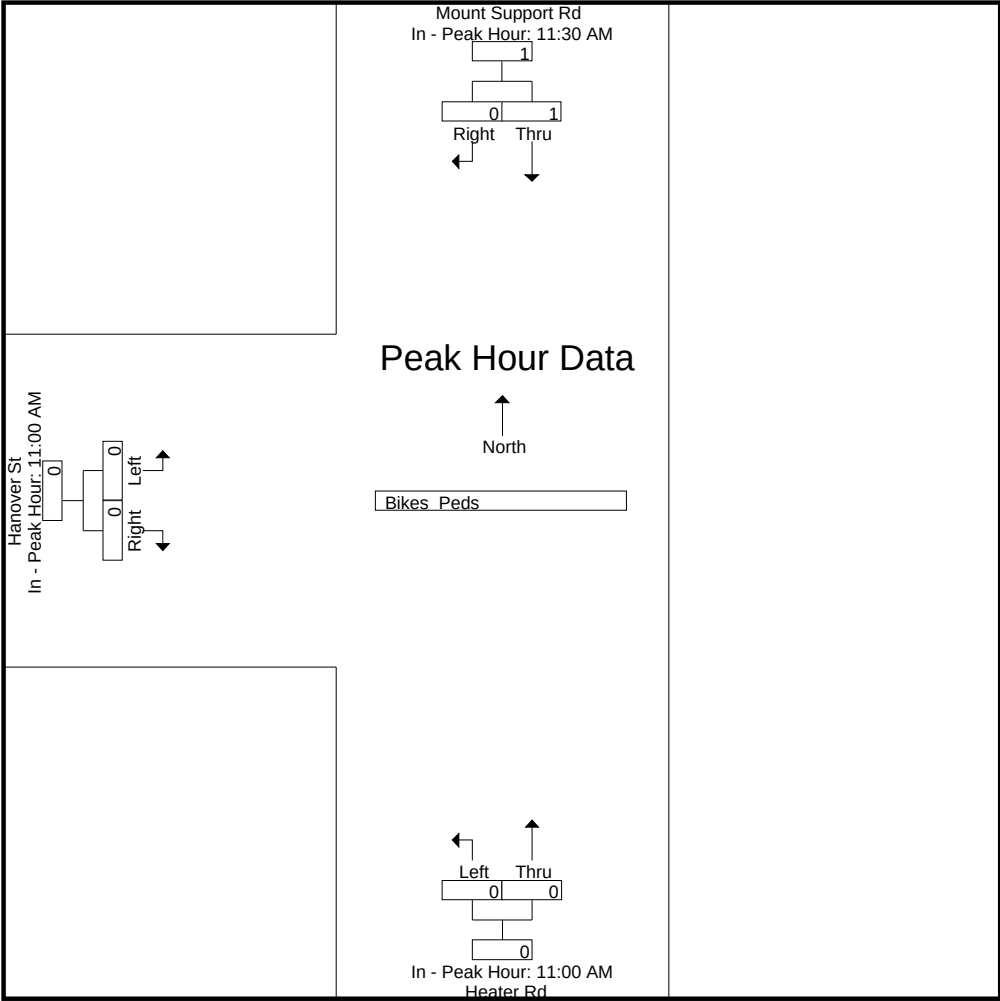


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:30 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	1	0	1	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	0	0
% App. Total	100	0		0	0		0	0	
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000

N/S Street : Mount Support Rd/Heater Rd
E/W Street : Hanover Street
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S3
Site Code : 52933003
Start Date : 11/12/2022
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Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

	Heater Rd From North			Old Etna Rd From East			Heater Rd From South			Old Etna Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	2	13	0	14	6	8	16	19	13	0	5	10	106
07:15 AM	3	23	1	17	14	5	25	25	8	1	15	28	165
07:30 AM	1	19	0	12	9	9	6	25	8	1	15	13	118
07:45 AM	9	29	0	15	11	10	17	26	5	0	15	18	155
Total	15	84	1	58	40	32	64	95	34	2	50	69	544
08:00 AM	6	9	0	11	5	8	1	23	11	0	9	11	94
08:15 AM	2	20	0	10	3	4	1	18	9	0	4	6	77
08:30 AM	4	14	0	14	0	6	1	14	13	0	4	4	74
08:45 AM	2	16	1	12	2	6	3	16	5	0	2	1	66
Total	14	59	1	47	10	24	6	71	38	0	19	22	311
Grand Total	29	143	2	105	50	56	70	166	72	2	69	91	855
Apprch %	16.7	82.2	1.1	49.8	23.7	26.5	22.7	53.9	23.4	1.2	42.6	56.2	
Total %	3.4	16.7	0.2	12.3	5.8	6.5	8.2	19.4	8.4	0.2	8.1	10.6	
Cars	29	131	2	104	49	56	70	155	72	2	69	84	823
% Cars	100	91.6	100	99	98	100	100	93.4	100	100	100	92.3	96.3
Trucks	0	12	0	1	1	0	0	11	0	0	0	7	32
% Trucks	0	8.4	0	1	2	0	0	6.6	0	0	0	7.7	3.7

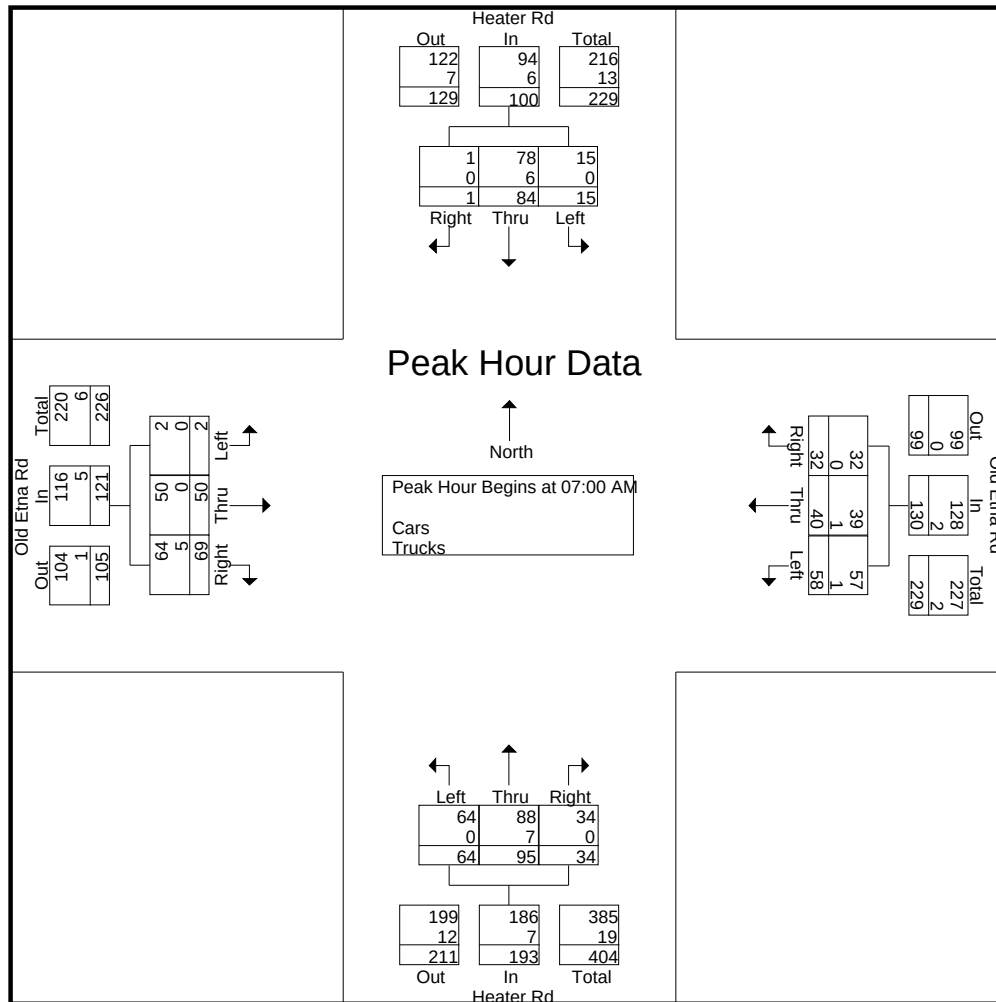
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	2	13	0	15	14	6	8	28	16	19	13	48	0	5	10	15	106
07:15 AM	3	23	1	27	17	14	5	36	25	25	8	58	1	15	28	44	165
07:30 AM	1	19	0	20	12	9	9	30	6	25	8	39	1	15	13	29	118
07:45 AM	9	29	0	38	15	11	10	36	17	26	5	48	0	15	18	33	155
Total Volume	15	84	1	100	58	40	32	130	64	95	34	193	2	50	69	121	544
% App. Total	15	84	1		44.6	30.8	24.6		33.2	49.2	17.6		1.7	41.3	57		
PHF	.417	.724	.250	.658	.853	.714	.800	.903	.640	.913	.654	.832	.500	.833	.616	.688	.824
Cars	15	78	1	94	57	39	32	128	64	88	34	186	2	50	64	116	524
% Cars	100	92.9	100	94.0	98.3	97.5	100	98.5	100	92.6	100	96.4	100	100	92.8	95.9	96.3
Trucks	0	6	0	6	1	1	0	2	0	7	0	7	0	0	5	5	20
% Trucks	0	7.1	0	6.0	1.7	2.5	0	1.5	0	7.4	0	3.6	0	0	7.2	4.1	3.7

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 2

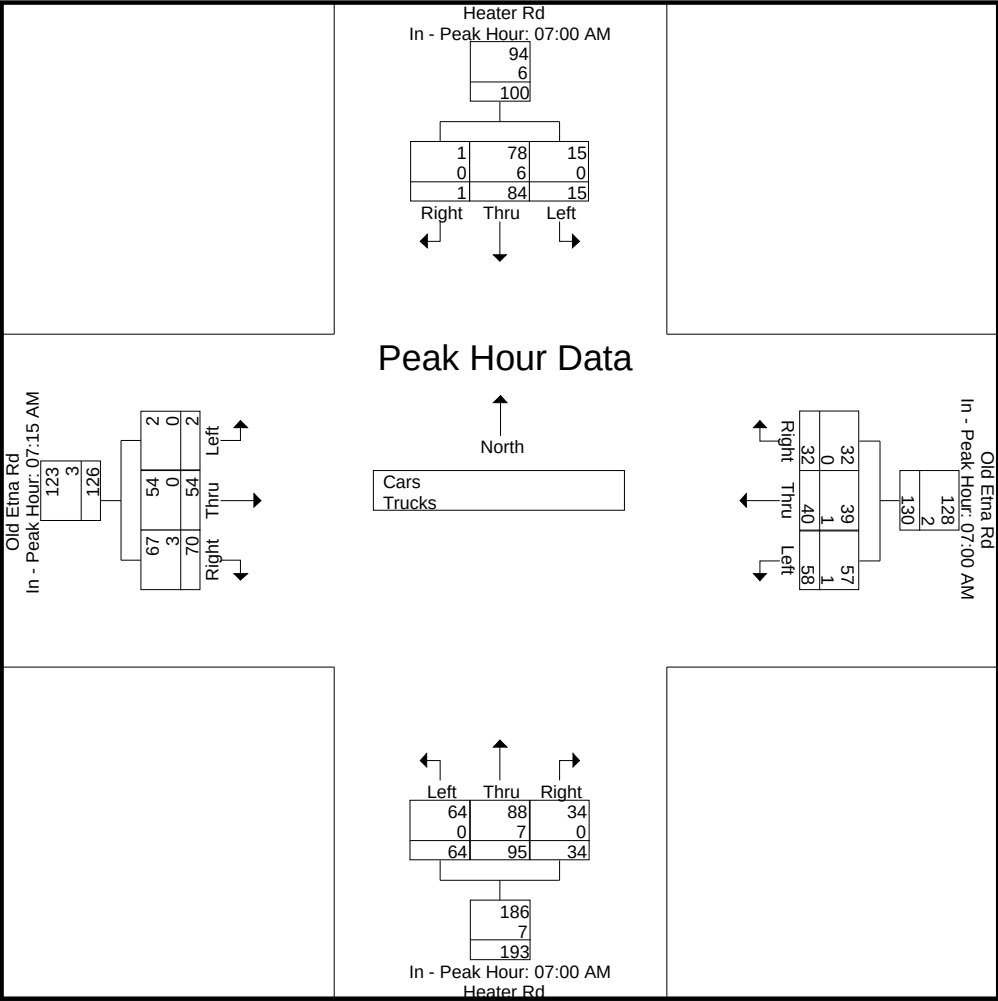


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:15 AM			
+0 mins.	2	13	0	15	14	6	8	28	16	19	13	48	1	15	28	44
+15 mins.	3	23	1	27	17	14	5	36	25	25	8	58	1	15	13	29
+30 mins.	1	19	0	20	12	9	9	30	6	25	8	39	0	15	18	33
+45 mins.	9	29	0	38	15	11	10	36	17	26	5	48	0	9	11	20
Total Volume	15	84	1	100	58	40	32	130	64	95	34	193	2	54	70	126
% App. Total	15	84	1		44.6	30.8	24.6		33.2	49.2	17.6		1.6	42.9	55.6	
PHF	.417	.724	.250	.658	.853	.714	.800	.903	.640	.913	.654	.832	.500	.900	.625	.716
Cars	15	78	1	94	57	39	32	128	64	88	34	186	2	54	67	123
% Cars	100	92.9	100	94	98.3	97.5	100	98.5	100	92.6	100	96.4	100	100	95.7	97.6
Trucks	0	6	0	6	1	1	0	2	0	7	0	7	0	0	3	3
% Trucks	0	7.1	0	6	1.7	2.5	0	1.5	0	7.4	0	3.6	0	0	4.3	2.4

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 4

Groups Printed- Cars

	Heater Rd From North			Old Etna Rd From East			Heater Rd From South			Old Etna Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	2	12	0	13	6	8	16	18	13	0	5	7	100
07:15 AM	3	22	1	17	14	5	25	23	8	1	15	27	161
07:30 AM	1	19	0	12	9	9	6	24	8	1	15	13	117
07:45 AM	9	25	0	15	10	10	17	23	5	0	15	17	146
Total	15	78	1	57	39	32	64	88	34	2	50	64	524
08:00 AM	6	9	0	11	5	8	1	22	11	0	9	10	92
08:15 AM	2	17	0	10	3	4	1	17	9	0	4	6	73
08:30 AM	4	12	0	14	0	6	1	13	13	0	4	3	70
08:45 AM	2	15	1	12	2	6	3	15	5	0	2	1	64
Total	14	53	1	47	10	24	6	67	38	0	19	20	299
Grand Total	29	131	2	104	49	56	70	155	72	2	69	84	823
Apprch %	17.9	80.9	1.2	49.8	23.4	26.8	23.6	52.2	24.2	1.3	44.5	54.2	
Total %	3.5	15.9	0.2	12.6	6	6.8	8.5	18.8	8.7	0.2	8.4	10.2	

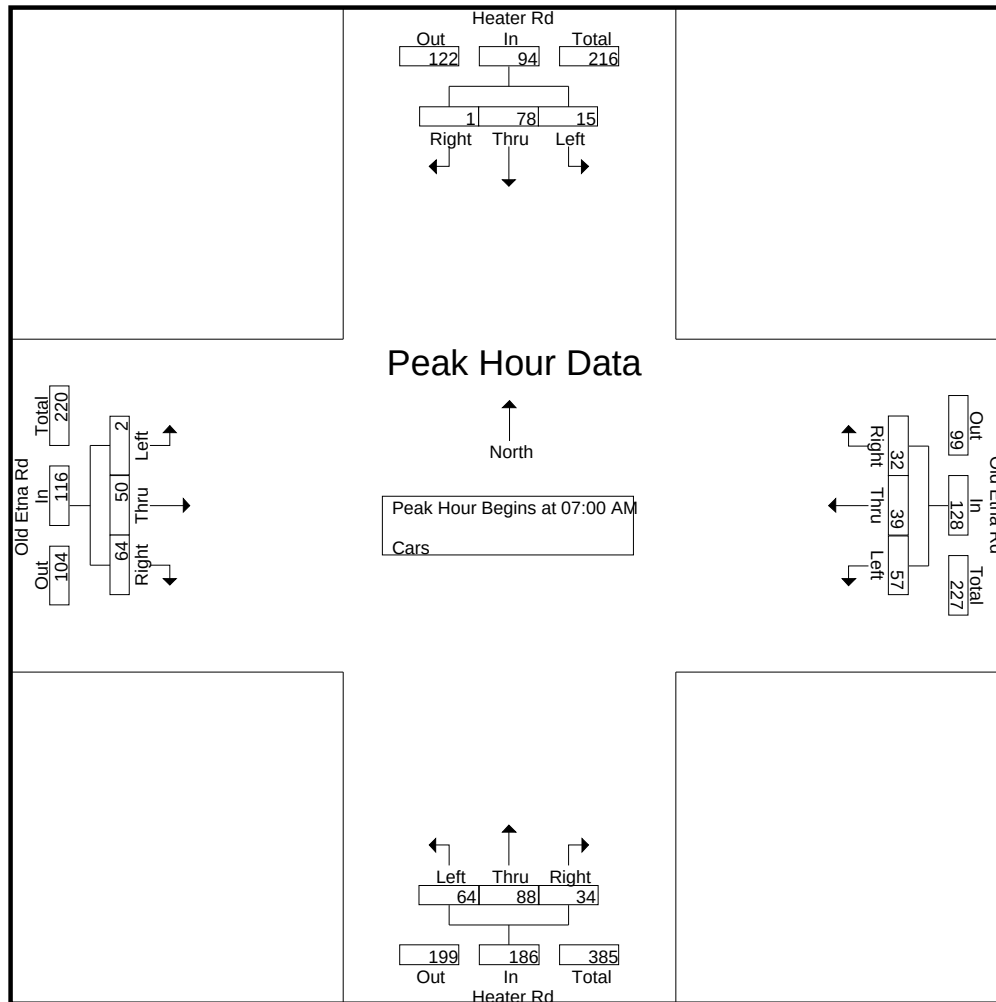
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	2	12	0	14	13	6	8	27	16	18	13	47	0	5	7	12	100
07:15 AM	3	22	1	26	17	14	5	36	25	23	8	56	1	15	27	43	161
07:30 AM	1	19	0	20	12	9	9	30	6	24	8	38	1	15	13	29	117
07:45 AM	9	25	0	34	15	10	10	35	17	23	5	45	0	15	17	32	146
Total Volume	15	78	1	94	57	39	32	128	64	88	34	186	2	50	64	116	524
% App. Total	16	83	1.1		44.5	30.5	25		34.4	47.3	18.3		1.7	43.1	55.2		
PHF	.417	.780	.250	.691	.838	.696	.800	.889	.640	.917	.654	.830	.500	.833	.593	.674	.814

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 5

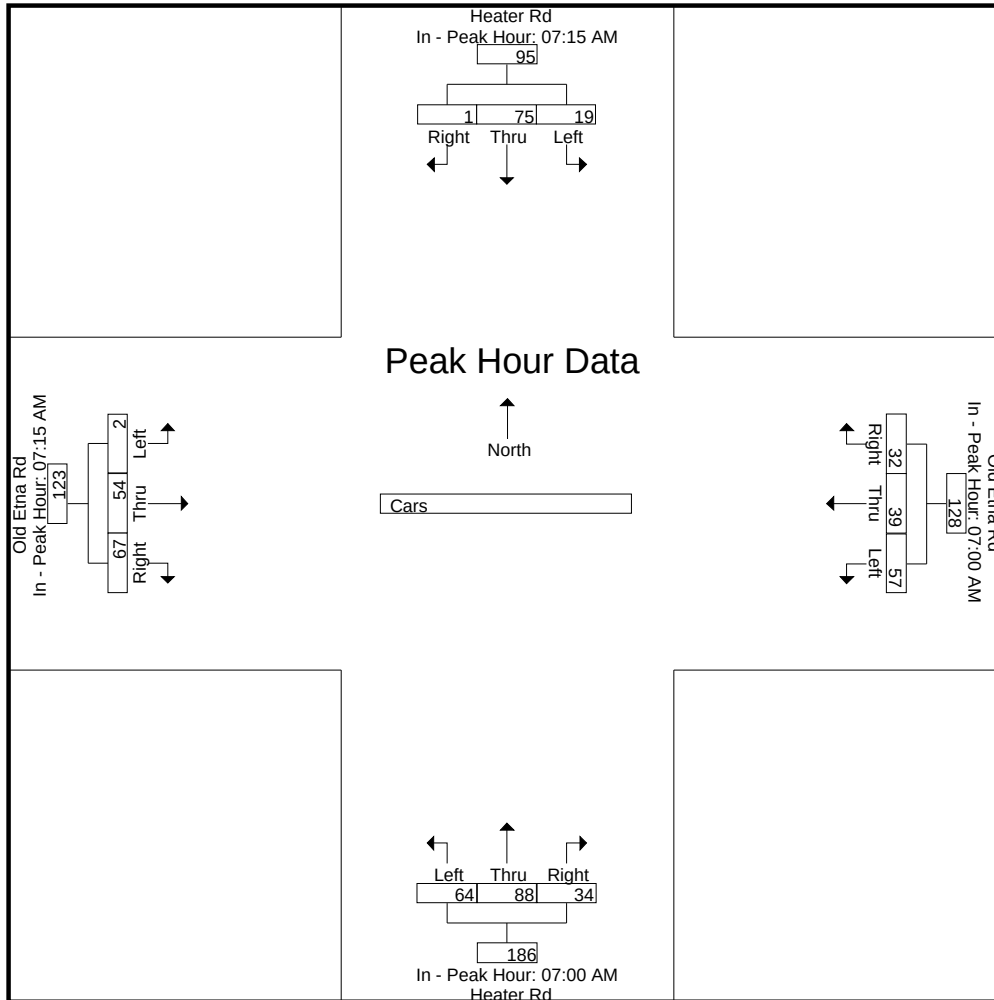


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:15 AM			
+0 mins.	3	22	1	26	13	6	8	27	16	18	13	47	1	15	27	43
+15 mins.	1	19	0	20	17	14	5	36	25	23	8	56	1	15	13	29
+30 mins.	9	25	0	34	12	9	9	30	6	24	8	38	0	15	17	32
+45 mins.	6	9	0	15	15	10	10	35	17	23	5	45	0	9	10	19
Total Volume	19	75	1	95	57	39	32	128	64	88	34	186	2	54	67	123
% App. Total	20	78.9	1.1		44.5	30.5	25		34.4	47.3	18.3		1.6	43.9	54.5	
PHF	.528	.750	.250	.699	.838	.696	.800	.889	.640	.917	.654	.830	.500	.900	.620	.715

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 7

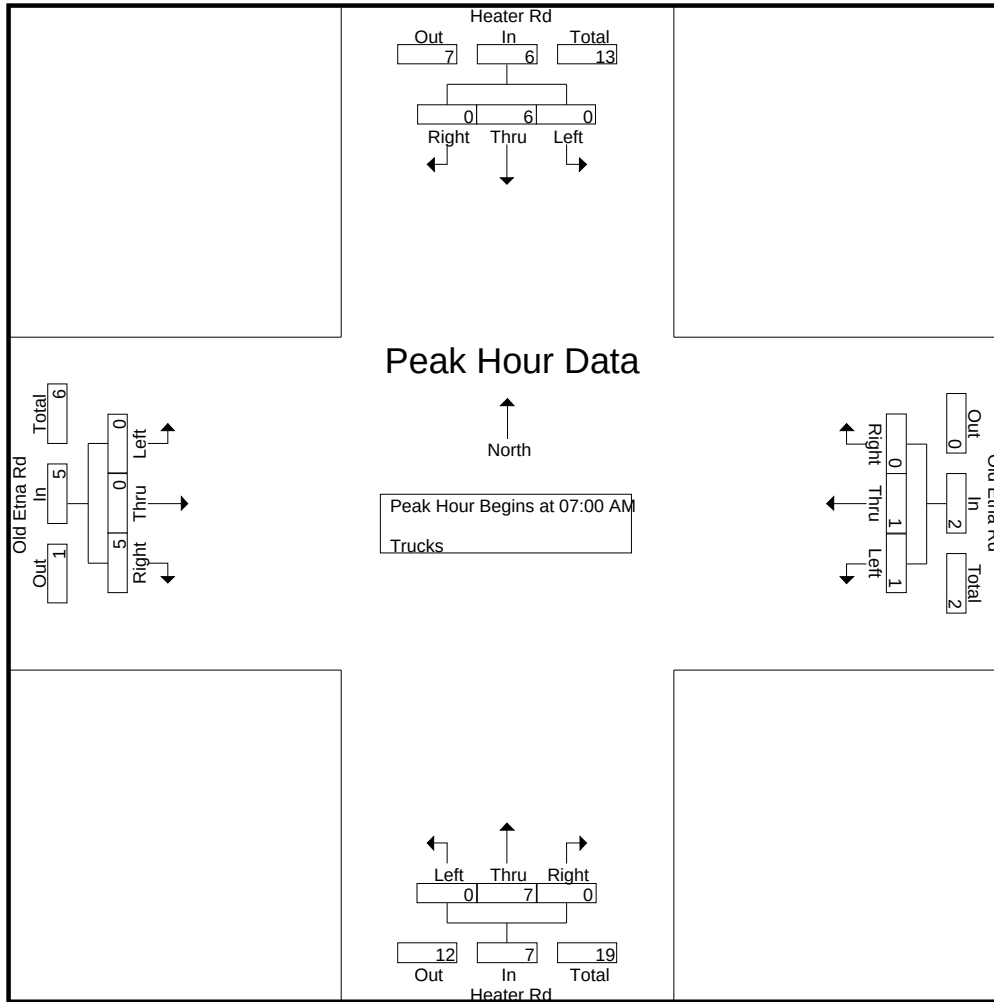
Groups Printed- Trucks

	Heater Rd From North			Old Etna Rd From East			Heater Rd From South			Old Etna Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	1	0	1	0	0	0	1	0	0	0	3	6
07:15 AM	0	1	0	0	0	0	0	2	0	0	0	1	4
07:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
07:45 AM	0	4	0	0	1	0	0	3	0	0	0	1	9
Total	0	6	0	1	1	0	0	7	0	0	0	5	20
08:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	2
08:15 AM	0	3	0	0	0	0	0	1	0	0	0	0	4
08:30 AM	0	2	0	0	0	0	0	1	0	0	0	1	4
08:45 AM	0	1	0	0	0	0	0	1	0	0	0	0	2
Total	0	6	0	0	0	0	0	4	0	0	0	2	12
Grand Total	0	12	0	1	1	0	0	11	0	0	0	7	32
Apprch %	0	100	0	50	50	0	0	100	0	0	0	100	
Total %	0	37.5	0	3.1	3.1	0	0	34.4	0	0	0	21.9	

	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	1	0	1	1	0	0	1	0	1	0	1	0	0	3	3	6
07:15 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	1	1	4
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	4	0	4	0	1	0	1	0	3	0	3	0	0	1	1	9
Total Volume	0	6	0	6	1	1	0	2	0	7	0	7	0	0	5	5	20
% App. Total	0	100	0		50	50	0		0	100	0		0	0	100		
PHF	.000	.375	.000	.375	.250	.250	.000	.500	.000	.583	.000	.583	.000	.000	.417	.417	.556

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 8

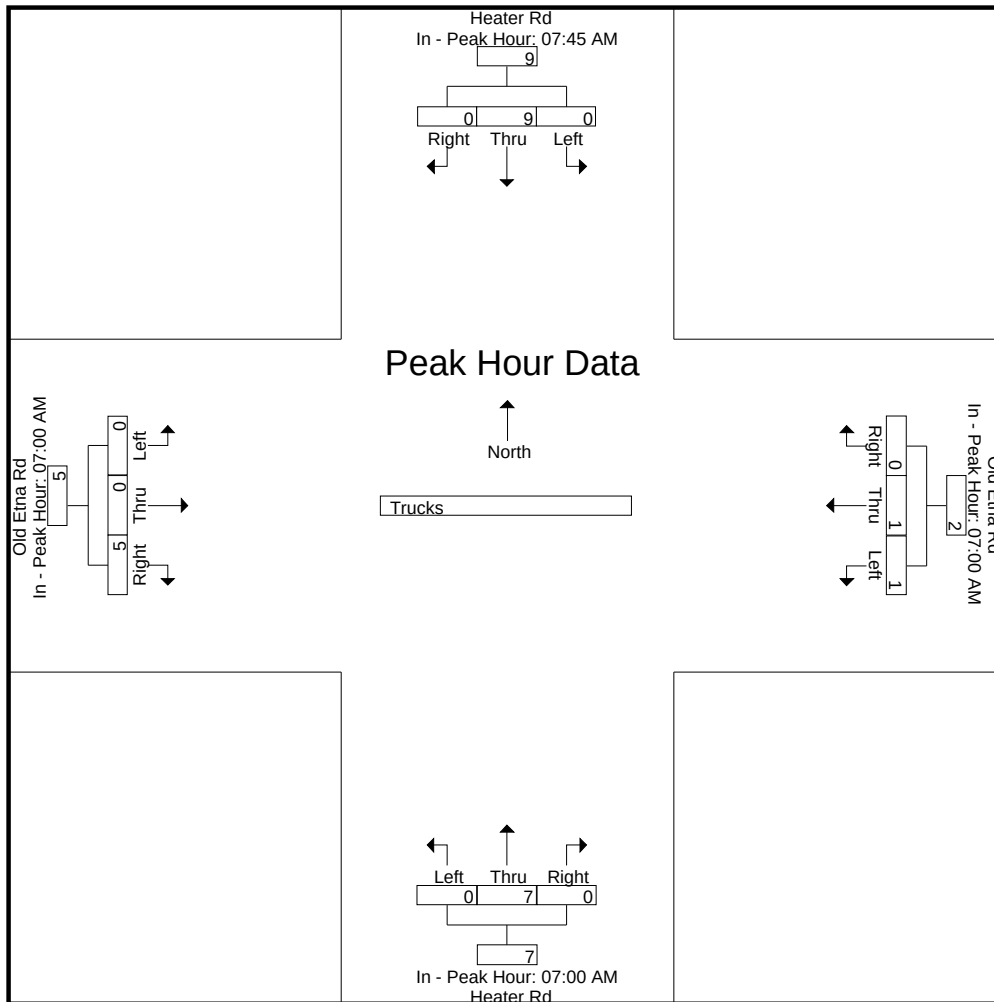


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	4	0	4	1	0	0	1	0	1	0	1	0	0	3	3
+15 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	1	1
+30 mins.	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	2	0	2	0	1	0	1	0	3	0	3	0	0	1	1
Total Volume	0	9	0	9	1	1	0	2	0	7	0	7	0	0	5	5
% App. Total	0	100	0		50	50	0		0	100	0		0	0	100	
PHF	.000	.563	.000	.563	.250	.250	.000	.500	.000	.583	.000	.583	.000	.000	.417	.417

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 10

Groups Printed- Bikes Peds

	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	3
07:15 AM	0	0	0	0	0	1	0	1	0	0	0	3	0	0	0	0	4	1	5
07:30 AM	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	0	4	1	5
07:45 AM	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2
Total	0	1	0	0	0	2	0	1	0	0	0	11	0	0	0	0	12	3	15
08:00 AM	0	0	0	0	0	0	0	4	0	0	0	3	0	0	0	0	7	0	7
08:15 AM	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0	5	0	5
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	14	0	14
Grand Total	0	1	0	0	0	2	0	8	0	0	0	18	0	0	0	0	26	3	29
Apprch %	0	100	0		0	100	0		0	0	0		0	0	0				
Total %	0	33.3	0		0	66.7	0		0	0	0		0	0	0		89.7	10.3	

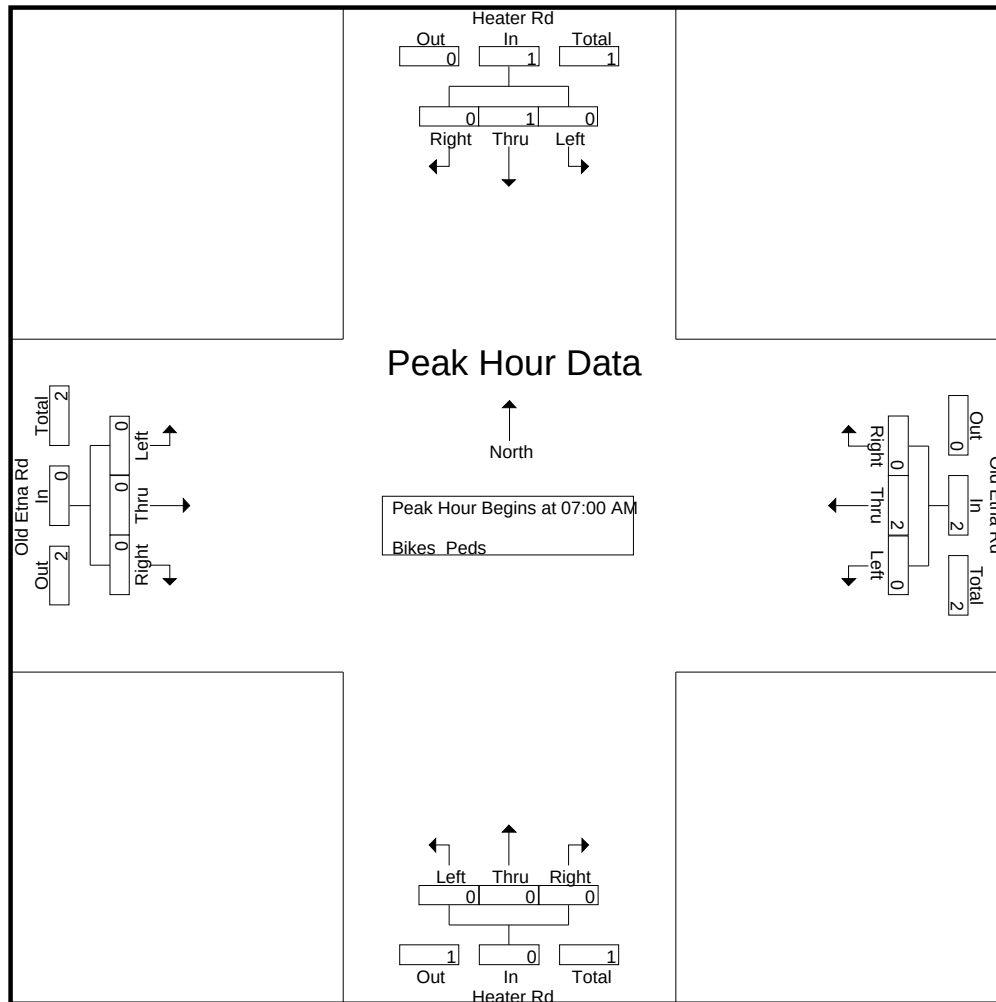
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:00 AM																			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	0	0	3
% App. Total	0	100	0		0	100	0		0	0	0		0	0	0				
PHF	.000	.250	.000	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 11

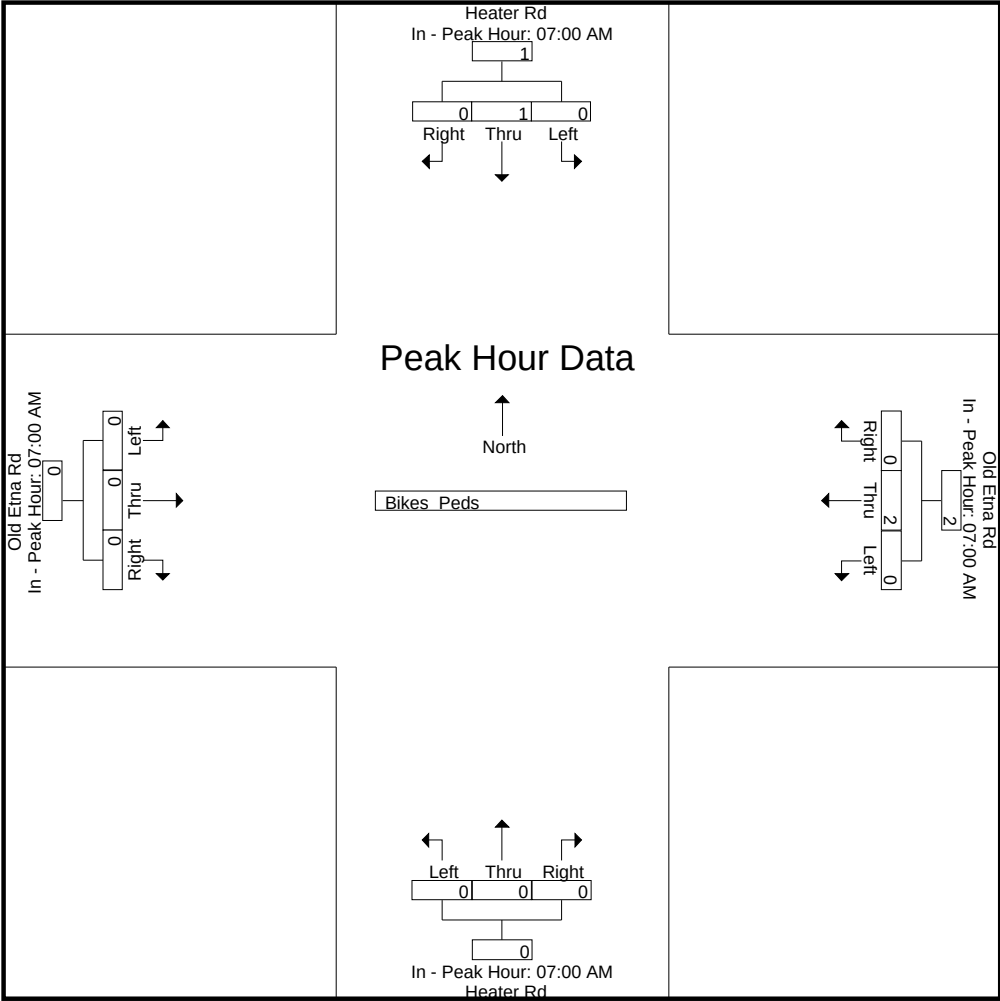


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	100	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

	Heater Rd From North			Old Etna Rd From East			Heater Rd From South			Old Etna Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
02:00 PM	2	25	1	9	3	1	5	10	9	1	2	20	88
02:15 PM	2	23	0	15	4	7	10	19	6	0	3	14	103
02:30 PM	3	37	1	19	6	4	11	12	13	0	4	23	133
02:45 PM	2	28	0	15	5	5	12	11	14	0	4	19	115
Total	9	113	2	58	18	17	38	52	42	1	13	76	439
03:00 PM	3	39	0	22	9	6	10	12	11	0	13	56	181
03:15 PM	6	31	0	14	3	8	3	10	17	1	3	14	110
03:30 PM	4	58	0	16	3	12	2	11	7	0	5	10	128
03:45 PM	3	43	3	24	4	9	5	13	11	0	1	3	119
Total	16	171	3	76	19	35	20	46	46	1	22	83	538
04:00 PM	2	58	2	8	2	4	1	12	10	0	2	8	109
04:15 PM	3	62	0	29	4	5	2	12	13	0	2	8	140
04:30 PM	1	47	1	25	1	5	3	17	18	0	1	7	126
04:45 PM	4	37	1	25	3	3	4	22	4	0	2	5	110
Total	10	204	4	87	10	17	10	63	45	0	7	28	485
05:00 PM	3	75	1	18	0	9	4	16	14	2	9	15	166
05:15 PM	2	67	0	24	2	3	6	26	17	0	1	5	153
05:30 PM	4	50	2	12	0	2	1	14	8	0	4	2	99
05:45 PM	0	25	0	11	1	3	2	18	12	0	3	2	77
Total	9	217	3	65	3	17	13	74	51	2	17	24	495
Grand Total	44	705	12	286	50	86	81	235	184	4	59	211	1957
Apprch %	5.8	92.6	1.6	67.8	11.8	20.4	16.2	47	36.8	1.5	21.5	77	
Total %	2.2	36	0.6	14.6	2.6	4.4	4.1	12	9.4	0.2	3	10.8	
Cars	42	682	12	281	49	85	79	217	184	4	57	198	1890
% Cars	95.5	96.7	100	98.3	98	98.8	97.5	92.3	100	100	96.6	93.8	96.6
Trucks	2	23	0	5	1	1	2	18	0	0	2	13	67
% Trucks	4.5	3.3	0	1.7	2	1.2	2.5	7.7	0	0	3.4	6.2	3.4

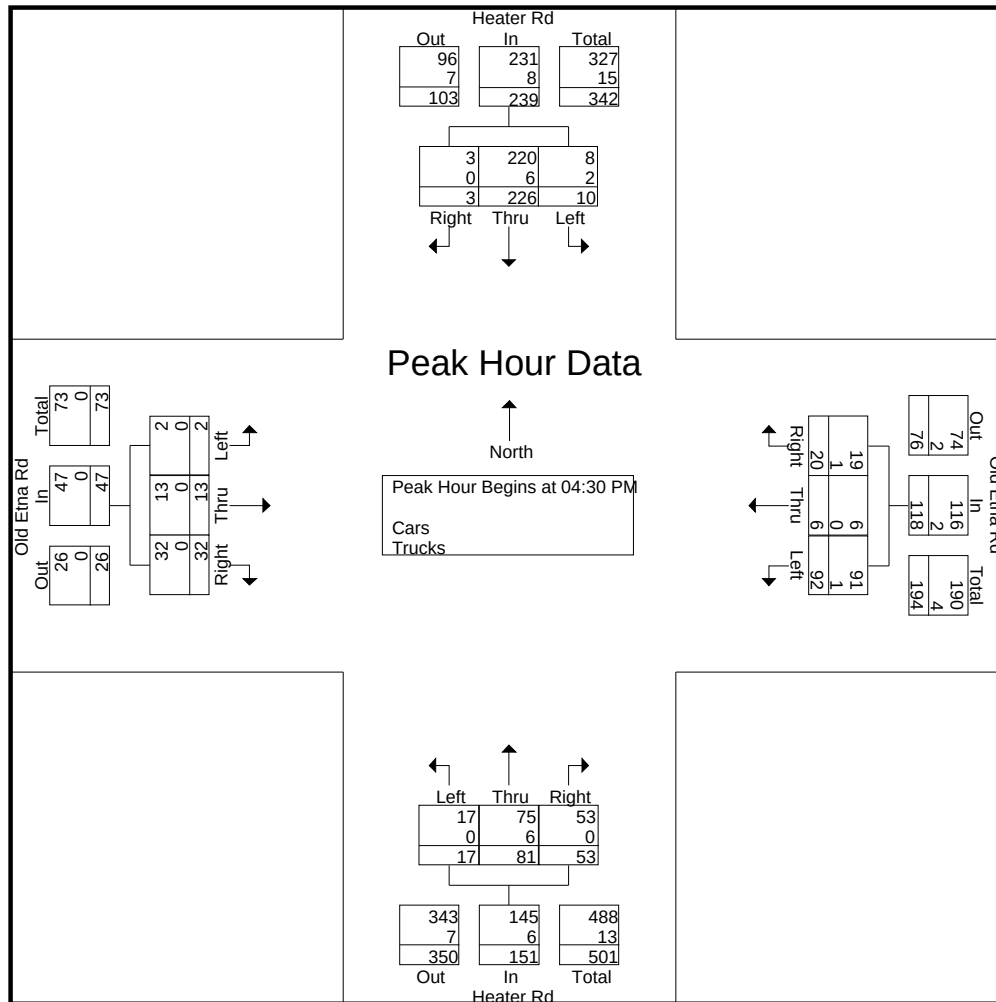
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	1	47	1	49	25	1	5	31	3	17	18	38	0	1	7	8	126
04:45 PM	4	37	1	42	25	3	3	31	4	22	4	30	0	2	5	7	110
05:00 PM	3	75	1	79	18	0	9	27	4	16	14	34	2	9	15	26	166
05:15 PM	2	67	0	69	24	2	3	29	6	26	17	49	0	1	5	6	153
Total Volume	10	226	3	239	92	6	20	118	17	81	53	151	2	13	32	47	555
% App. Total	4.2	94.6	1.3		78	5.1	16.9		11.3	53.6	35.1		4.3	27.7	68.1		
PHF	.625	.753	.750	.756	.920	.500	.556	.952	.708	.779	.736	.770	.250	.361	.533	.452	.836
Cars	8	220	3	231	91	6	19	116	17	75	53	145	2	13	32	47	539
% Cars	80.0	97.3	100	96.7	98.9	100	95.0	98.3	100	92.6	100	96.0	100	100	100	100	97.1
Trucks	2	6	0	8	1	0	1	2	0	6	0	6	0	0	0	0	16
% Trucks	20.0	2.7	0	3.3	1.1	0	5.0	1.7	0	7.4	0	4.0	0	0	0	0	2.9

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 2

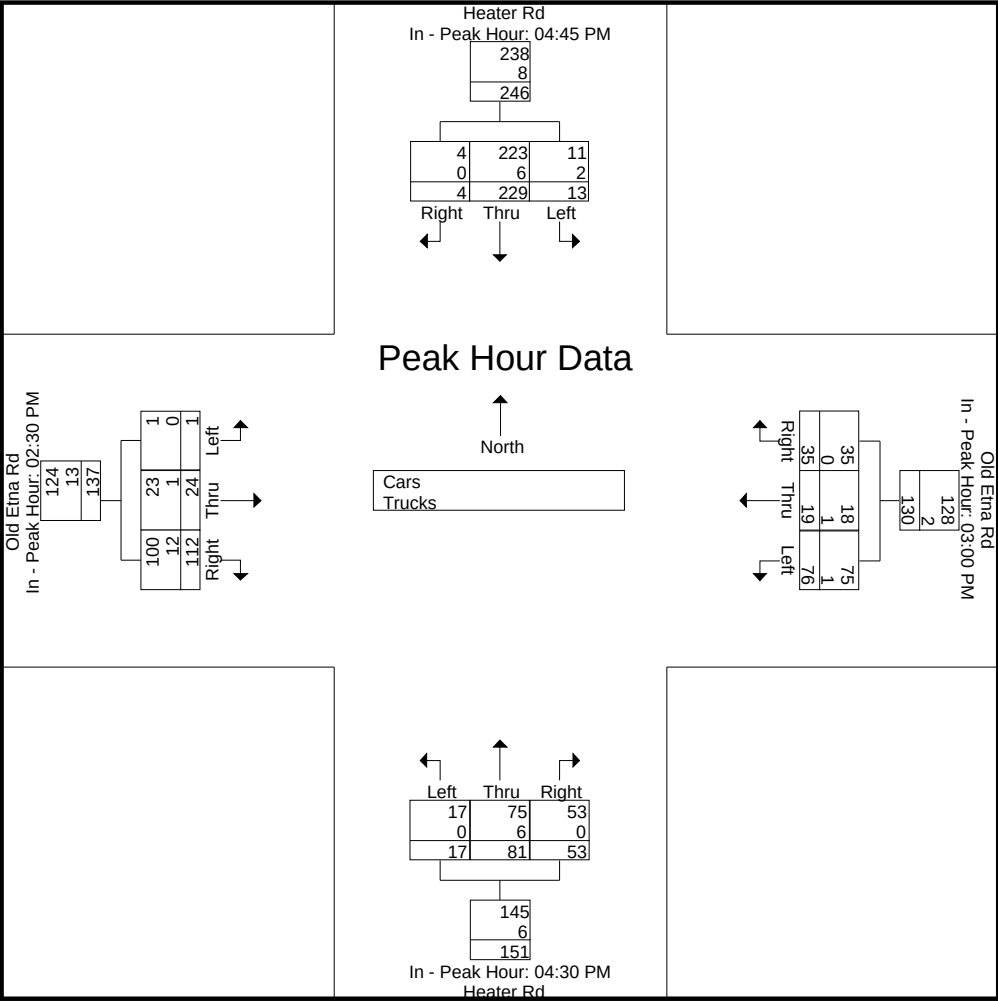


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				03:00 PM				04:30 PM				02:30 PM			
+0 mins.	4	37	1	42	22	9	6	37	3	17	18	38	0	4	23	27
+15 mins.	3	75	1	79	14	3	8	25	4	22	4	30	0	4	19	23
+30 mins.	2	67	0	69	16	3	12	31	4	16	14	34	0	13	56	69
+45 mins.	4	50	2	56	24	4	9	37	6	26	17	49	1	3	14	18
Total Volume	13	229	4	246	76	19	35	130	17	81	53	151	1	24	112	137
% App. Total	5.3	93.1	1.6		58.5	14.6	26.9		11.3	53.6	35.1		0.7	17.5	81.8	
PHF	.813	.763	.500	.778	.792	.528	.729	.878	.708	.779	.736	.770	.250	.462	.500	.496
Cars	11	223	4	238	75	18	35	128	17	75	53	145	1	23	100	124
% Cars	84.6	97.4	100	96.7	98.7	94.7	100	98.5	100	92.6	100	96	100	95.8	89.3	90.5
Trucks	2	6	0	8	1	1	0	2	0	6	0	6	0	1	12	13
% Trucks	15.4	2.6	0	3.3	1.3	5.3	0	1.5	0	7.4	0	4	0	4.2	10.7	9.5

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 4

Groups Printed- Cars

	Heater Rd From North			Old Etna Rd From East			Heater Rd From South			Old Etna Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
02:00 PM	2	24	1	9	3	1	5	9	9	1	2	19	85
02:15 PM	2	22	0	15	4	7	10	17	6	0	3	14	100
02:30 PM	3	34	1	19	6	4	11	11	13	0	4	17	123
02:45 PM	2	27	0	14	5	5	11	10	14	0	3	16	107
Total	9	107	2	57	18	17	37	47	42	1	12	66	415
03:00 PM	3	37	0	22	9	6	9	11	11	0	13	53	174
03:15 PM	6	30	0	13	3	8	3	9	17	1	3	14	107
03:30 PM	4	57	0	16	3	12	2	10	7	0	5	10	126
03:45 PM	3	42	3	24	3	9	5	12	11	0	1	3	116
Total	16	166	3	75	18	35	19	42	46	1	22	80	523
04:00 PM	2	56	2	8	2	4	1	11	10	0	2	8	106
04:15 PM	3	60	0	28	4	5	2	11	13	0	2	8	136
04:30 PM	1	46	1	25	1	5	3	16	18	0	1	7	124
04:45 PM	3	36	1	24	3	3	4	19	4	0	2	5	104
Total	9	198	4	85	10	17	10	57	45	0	7	28	470
05:00 PM	3	75	1	18	0	8	4	15	14	2	9	15	164
05:15 PM	1	63	0	24	2	3	6	25	17	0	1	5	147
05:30 PM	4	49	2	11	0	2	1	14	8	0	3	2	96
05:45 PM	0	24	0	11	1	3	2	17	12	0	3	2	75
Total	8	211	3	64	3	16	13	71	51	2	16	24	482
Grand Total	42	682	12	281	49	85	79	217	184	4	57	198	1890
Apprch %	5.7	92.7	1.6	67.7	11.8	20.5	16.5	45.2	38.3	1.5	22	76.4	
Total %	2.2	36.1	0.6	14.9	2.6	4.5	4.2	11.5	9.7	0.2	3	10.5	

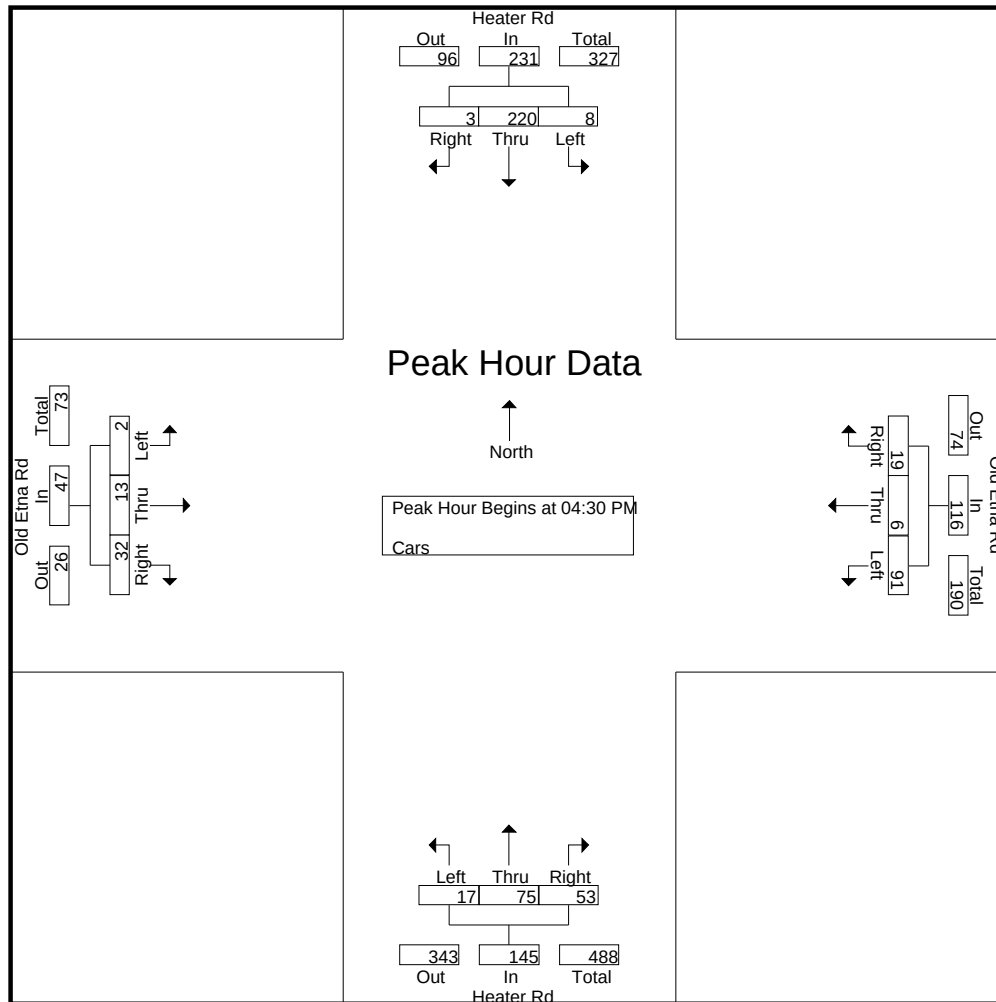
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	1	46	1	48	25	1	5	31	3	16	18	37	0	1	7	8	124
04:45 PM	3	36	1	40	24	3	3	30	4	19	4	27	0	2	5	7	104
05:00 PM	3	75	1	79	18	0	8	26	4	15	14	33	2	9	15	26	164
05:15 PM	1	63	0	64	24	2	3	29	6	25	17	48	0	1	5	6	147
Total Volume	8	220	3	231	91	6	19	116	17	75	53	145	2	13	32	47	539
% App. Total	3.5	95.2	1.3		78.4	5.2	16.4		11.7	51.7	36.6		4.3	27.7	68.1		
PHF	.667	.733	.750	.731	.910	.500	.594	.935	.708	.750	.736	.755	.250	.361	.533	.452	.822

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 5

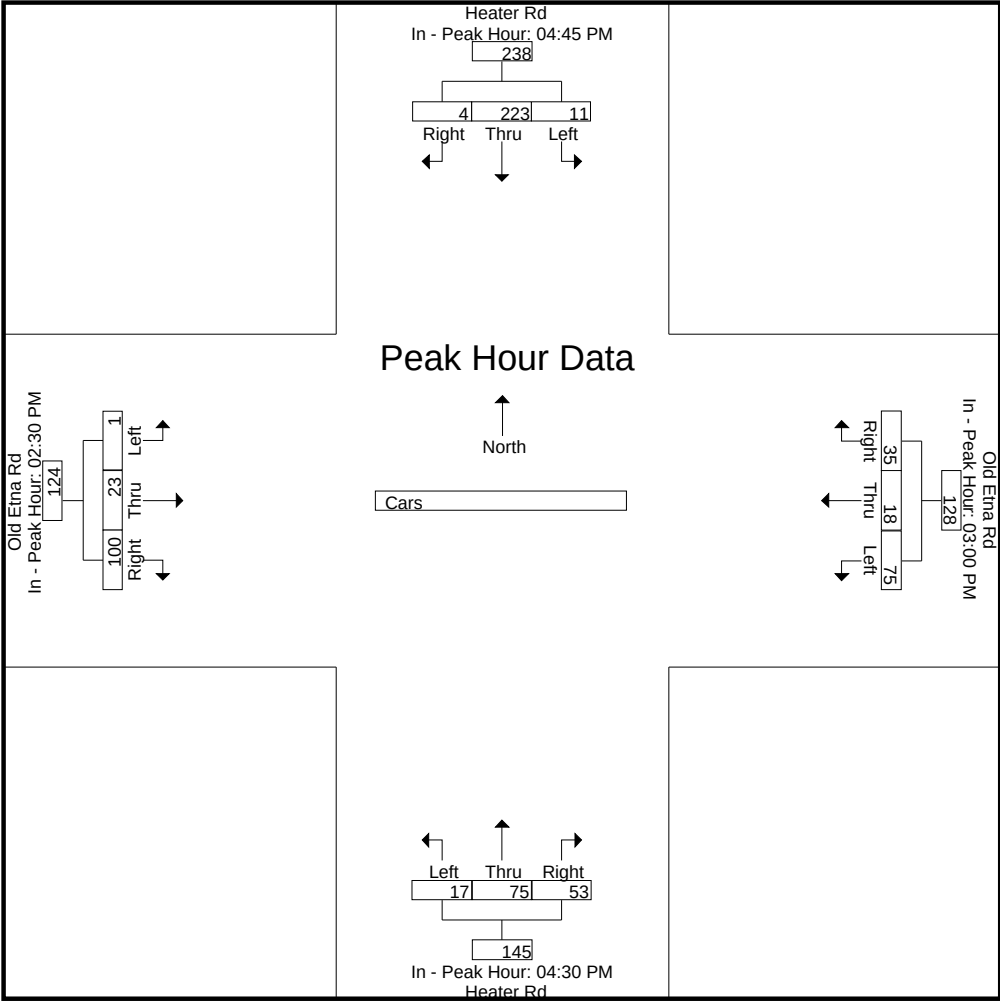


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				03:00 PM				04:30 PM				02:30 PM			
+0 mins.	3	36	1	40	22	9	6	37	3	16	18	37	0	4	17	21
+15 mins.	3	75	1	79	13	3	8	24	4	19	4	27	0	3	16	19
+30 mins.	1	63	0	64	16	3	12	31	4	15	14	33	0	13	53	66
+45 mins.	4	49	2	55	24	3	9	36	6	25	17	48	1	3	14	18
Total Volume	11	223	4	238	75	18	35	128	17	75	53	145	1	23	100	124
% App. Total	4.6	93.7	1.7		58.6	14.1	27.3		11.7	51.7	36.6		0.8	18.5	80.6	
PHF	.688	.743	.500	.753	.781	.500	.729	.865	.708	.750	.736	.755	.250	.442	.472	.470

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 7

Groups Printed- Trucks

	Heater Rd From North			Old Etna Rd From East			Heater Rd From South			Old Etna Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
02:00 PM	0	1	0	0	0	0	0	1	0	0	0	1	3
02:15 PM	0	1	0	0	0	0	0	2	0	0	0	0	3
02:30 PM	0	3	0	0	0	0	0	1	0	0	0	6	10
02:45 PM	0	1	0	1	0	0	1	1	0	0	1	3	8
Total	0	6	0	1	0	0	1	5	0	0	1	10	24
03:00 PM	0	2	0	0	0	0	1	1	0	0	0	3	7
03:15 PM	0	1	0	1	0	0	0	1	0	0	0	0	3
03:30 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
03:45 PM	0	1	0	0	1	0	0	1	0	0	0	0	3
Total	0	5	0	1	1	0	1	4	0	0	0	3	15
04:00 PM	0	2	0	0	0	0	0	1	0	0	0	0	3
04:15 PM	0	2	0	1	0	0	0	1	0	0	0	0	4
04:30 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
04:45 PM	1	1	0	1	0	0	0	3	0	0	0	0	6
Total	1	6	0	2	0	0	0	6	0	0	0	0	15
05:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	2
05:15 PM	1	4	0	0	0	0	0	1	0	0	0	0	6
05:30 PM	0	1	0	1	0	0	0	0	0	0	1	0	3
05:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
Total	1	6	0	1	0	1	0	3	0	0	1	0	13
Grand Total	2	23	0	5	1	1	2	18	0	0	2	13	67
Apprch %	8	92	0	71.4	14.3	14.3	10	90	0	0	13.3	86.7	
Total %	3	34.3	0	7.5	1.5	1.5	3	26.9	0	0	3	19.4	

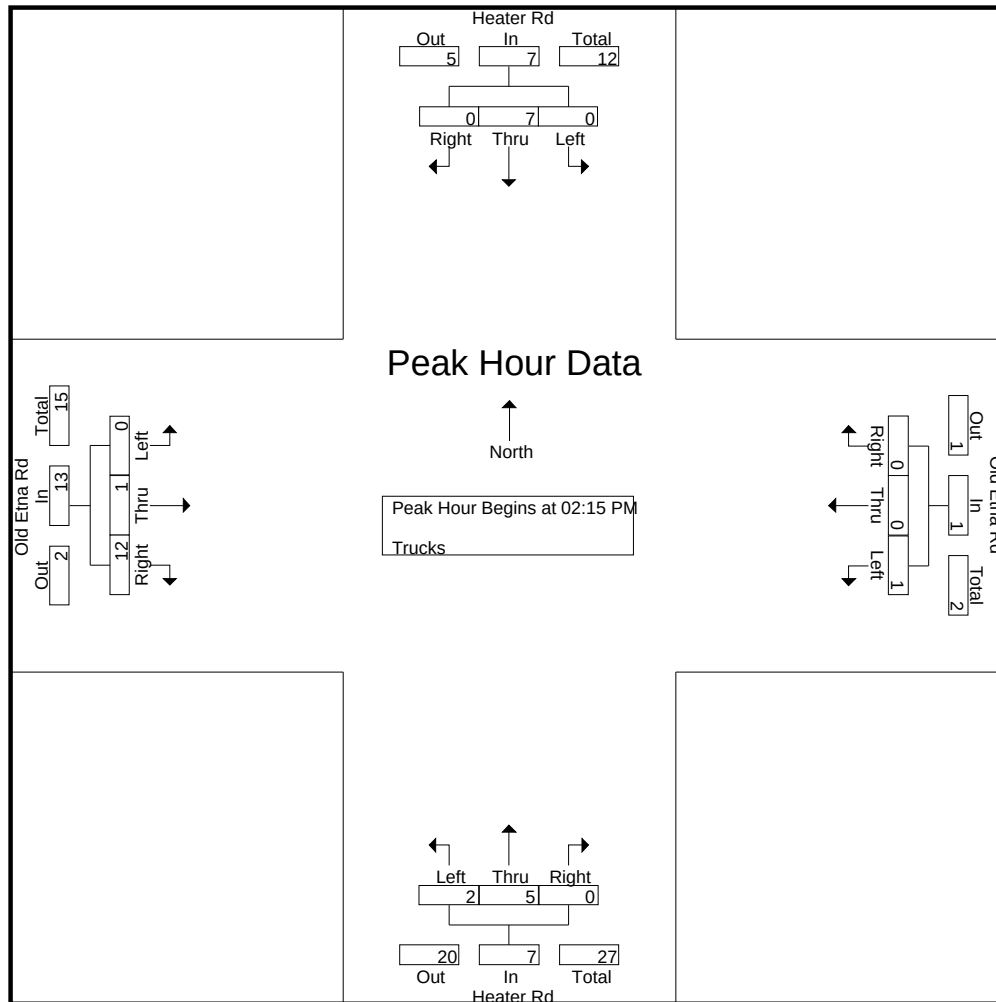
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:15 PM																	
02:15 PM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
02:30 PM	0	3	0	3	0	0	0	0	0	1	0	1	0	0	6	6	10
02:45 PM	0	1	0	1	1	0	0	1	1	1	0	2	0	1	3	4	8
03:00 PM	0	2	0	2	0	0	0	0	1	1	0	2	0	0	3	3	7
Total Volume	0	7	0	7	1	0	0	1	2	5	0	7	0	1	12	13	28
% App. Total	0	100	0		100	0	0		28.6	71.4	0		0	7.7	92.3		
PHF	.000	.583	.000	.583	.250	.000	.000	.250	.500	.625	.000	.875	.000	.250	.500	.542	.700

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 8

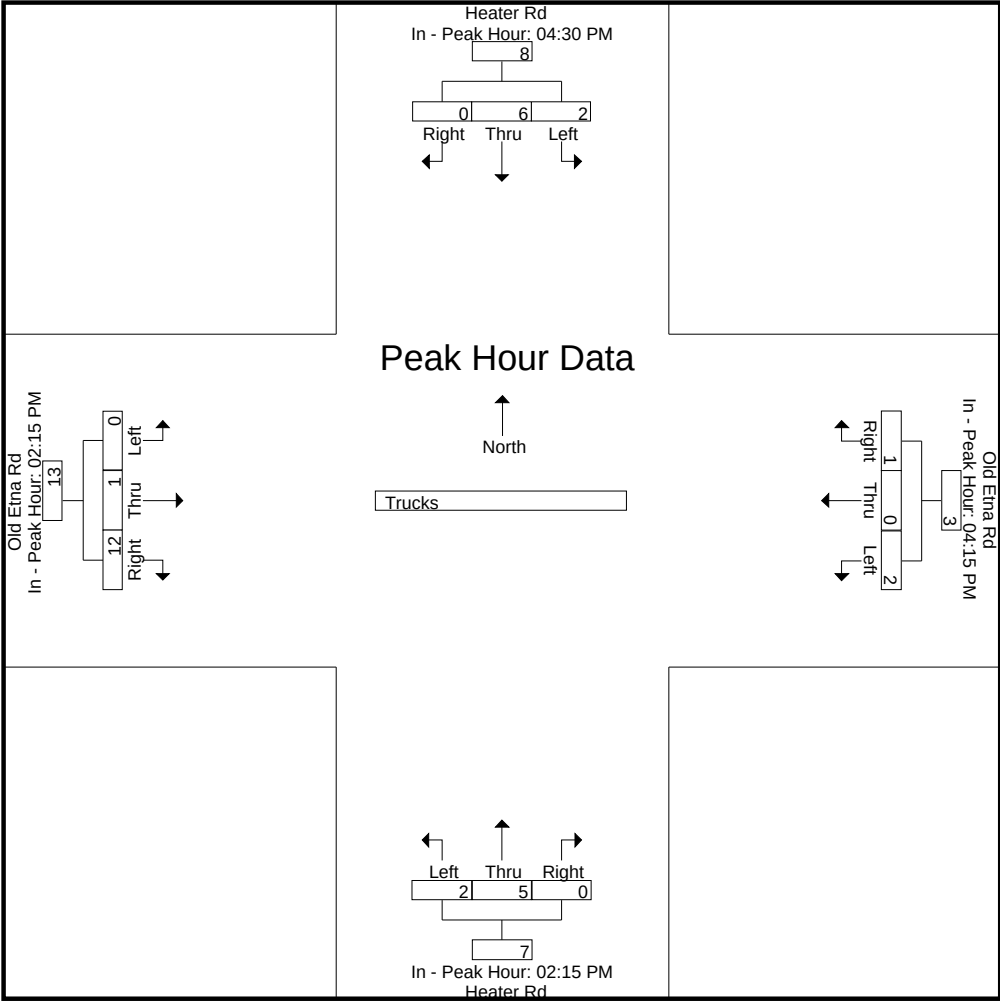


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:15 PM				02:15 PM				02:15 PM			
+0 mins.	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0
+15 mins.	1	1	0	2	0	0	0	0	0	1	0	1	0	0	6	6
+30 mins.	0	0	0	0	1	0	0	1	1	1	0	2	0	1	3	4
+45 mins.	1	4	0	5	0	0	1	1	1	1	0	2	0	0	3	3
Total Volume	2	6	0	8	2	0	1	3	2	5	0	7	0	1	12	13
% App. Total	25	75	0		66.7	0	33.3		28.6	71.4	0		0	7.7	92.3	
PHF	.500	.375	.000	.400	.500	.000	.250	.750	.500	.625	.000	.875	.000	.250	.500	.542

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 10

Groups Printed- Bikes Peds

	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
02:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	2	1	3
02:15 PM	0	0	0	0	0	3	1	0	0	0	0	1	0	0	0	0	1	4	5
02:30 PM	0	0	1	0	0	2	0	1	0	0	0	8	0	0	0	0	9	3	12
02:45 PM	0	0	0	0	0	1	0	2	0	0	0	7	0	0	0	0	9	1	10
Total	0	0	1	0	0	6	1	4	0	0	0	17	0	1	0	0	21	9	30
03:00 PM	0	0	0	0	0	1	0	2	0	0	0	4	0	0	0	0	6	1	7
03:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	2	1	3
03:30 PM	0	0	0	0	0	1	0	2	0	0	0	6	0	0	0	0	8	1	9
03:45 PM	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	3	0	3
Total	0	0	0	0	0	2	0	6	0	0	0	13	0	0	1	0	19	3	22
04:00 PM	0	0	0	0	0	1	0	3	0	0	0	2	0	0	0	0	5	1	6
04:15 PM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	6	0	6
04:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	8	0	0	0	5	0	0	0	0	13	1	14
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	2
Grand Total	0	0	1	0	0	9	1	20	0	0	0	35	0	1	1	0	55	13	68
Apprch %	0	0	100		0	90	10		0	0	0		0	50	50				
Total %	0	0	7.7		0	69.2	7.7		0	0	0		0	7.7	7.7		80.9	19.1	

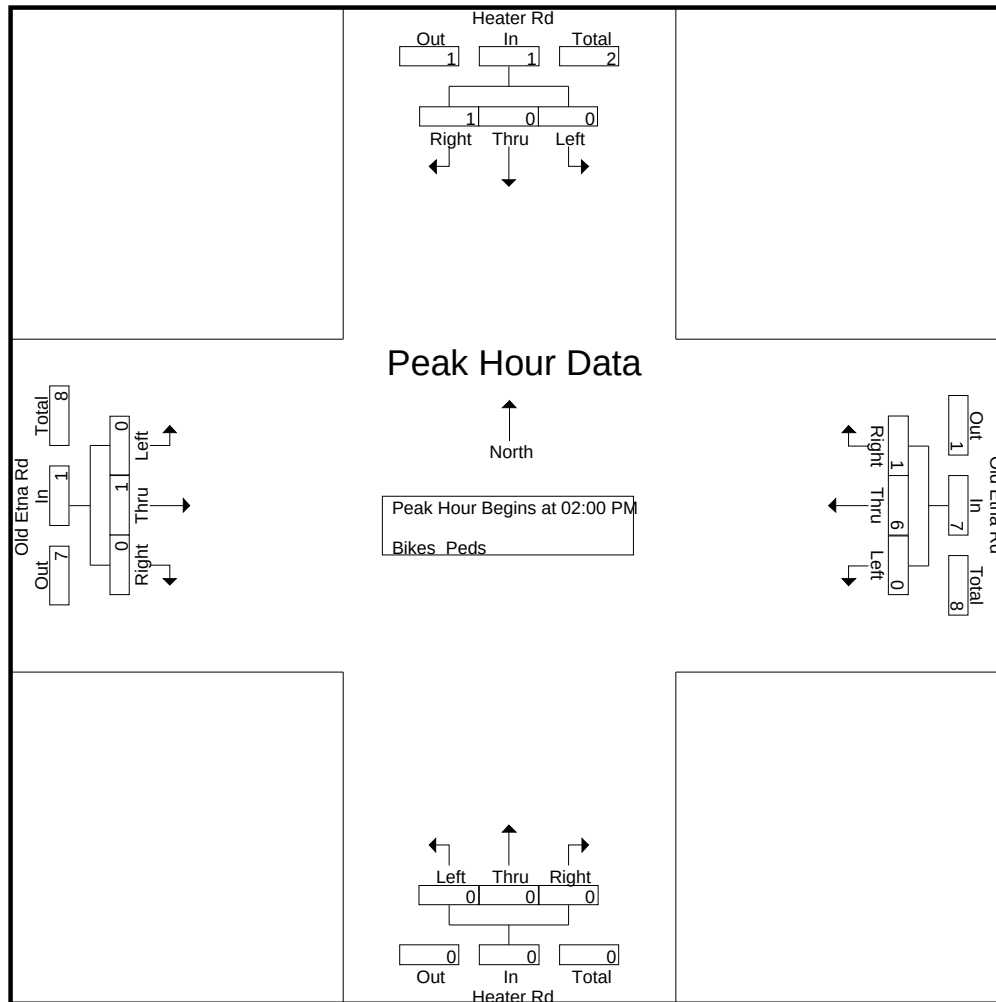
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
02:15 PM	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	0	4
02:30 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
02:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	1	0	6	1	7	0	0	0	0	0	1	0	1	9
% App. Total	0	0	100		0	85.7	14.3		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.000	.500	.250	.438	.000	.000	.000	.000	.000	.250	.000	.250	.563

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 11

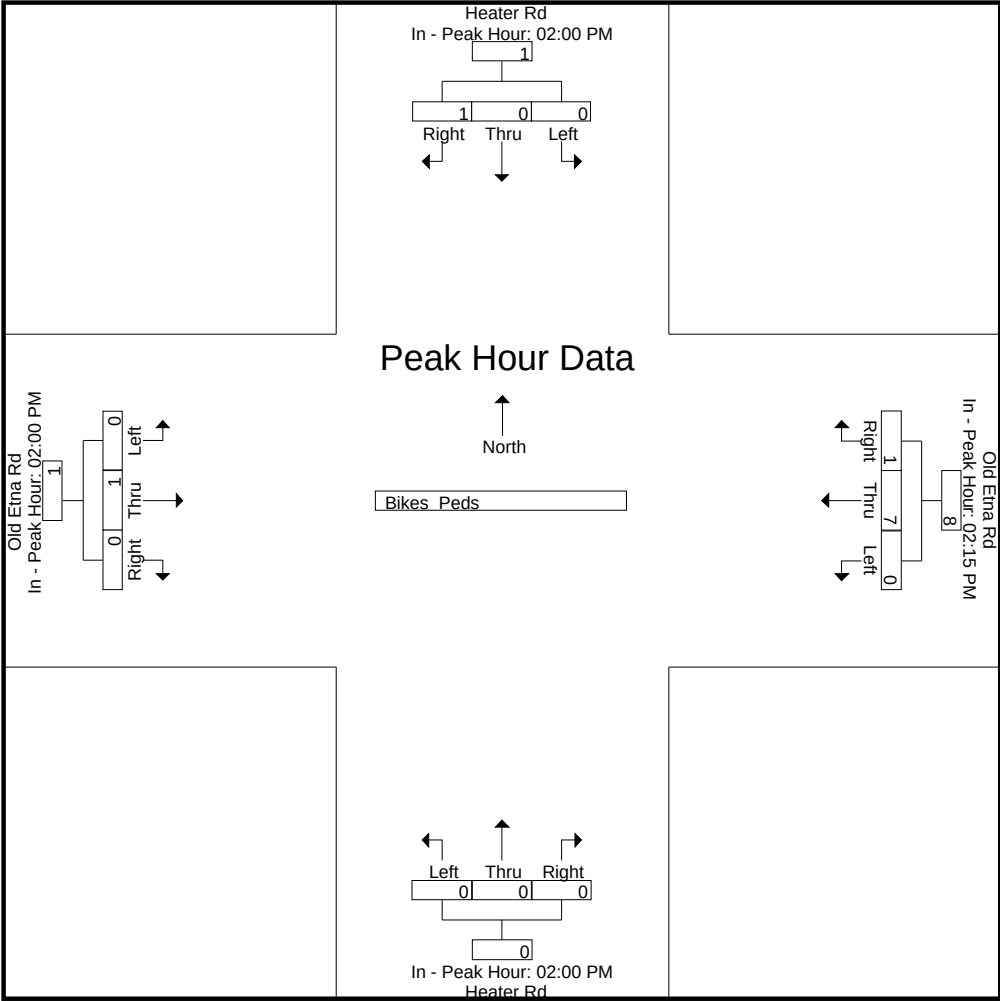


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM				02:15 PM				02:00 PM				02:00 PM			
+0 mins.	0	0	0	0	0	3	1	4	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0
+30 mins.	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	7	1	8	0	0	0	0	0	1	0	1
% App. Total	0	0	100		0	87.5	12.5		0	0	0		0	100	0	
PHF	.000	.000	.250	.250	.000	.583	.250	.500	.000	.000	.000	.000	.000	.250	.000	.250

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933004
Site Code : 52933004
Start Date : 11/10/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S4
Site Code : 52933004
Start Date : 11/12/2022
Page No : 1

Groups Printed- Cars - Trucks

	Heater Rd From North			Old Etna Rd From East			Heater Rd From South			Old Etna Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	2	10	0	13	0	3	0	14	2	0	3	2	49
11:15 AM	0	16	0	14	0	5	1	14	8	0	3	0	61
11:30 AM	0	15	0	13	0	1	1	11	8	0	2	0	51
11:45 AM	0	17	0	10	2	1	0	4	5	0	1	1	41
Total	2	58	0	50	2	10	2	43	23	0	9	3	202
12:00 PM	0	18	0	6	0	2	0	11	3	0	1	1	42
12:15 PM	0	12	0	22	1	0	0	9	11	0	1	0	56
12:30 PM	2	14	1	12	0	1	0	10	6	0	2	0	48
12:45 PM	0	12	0	9	0	1	0	12	7	0	0	1	42
Total	2	56	1	49	1	4	0	42	27	0	4	2	188
Grand Total	4	114	1	99	3	14	2	85	50	0	13	5	390
Apprch %	3.4	95.8	0.8	85.3	2.6	12.1	1.5	62	36.5	0	72.2	27.8	
Total %	1	29.2	0.3	25.4	0.8	3.6	0.5	21.8	12.8	0	3.3	1.3	
Cars	4	114	1	99	3	14	2	85	50	0	13	5	390
% Cars	100	100	100	100	100	100	100	100	100	0	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0

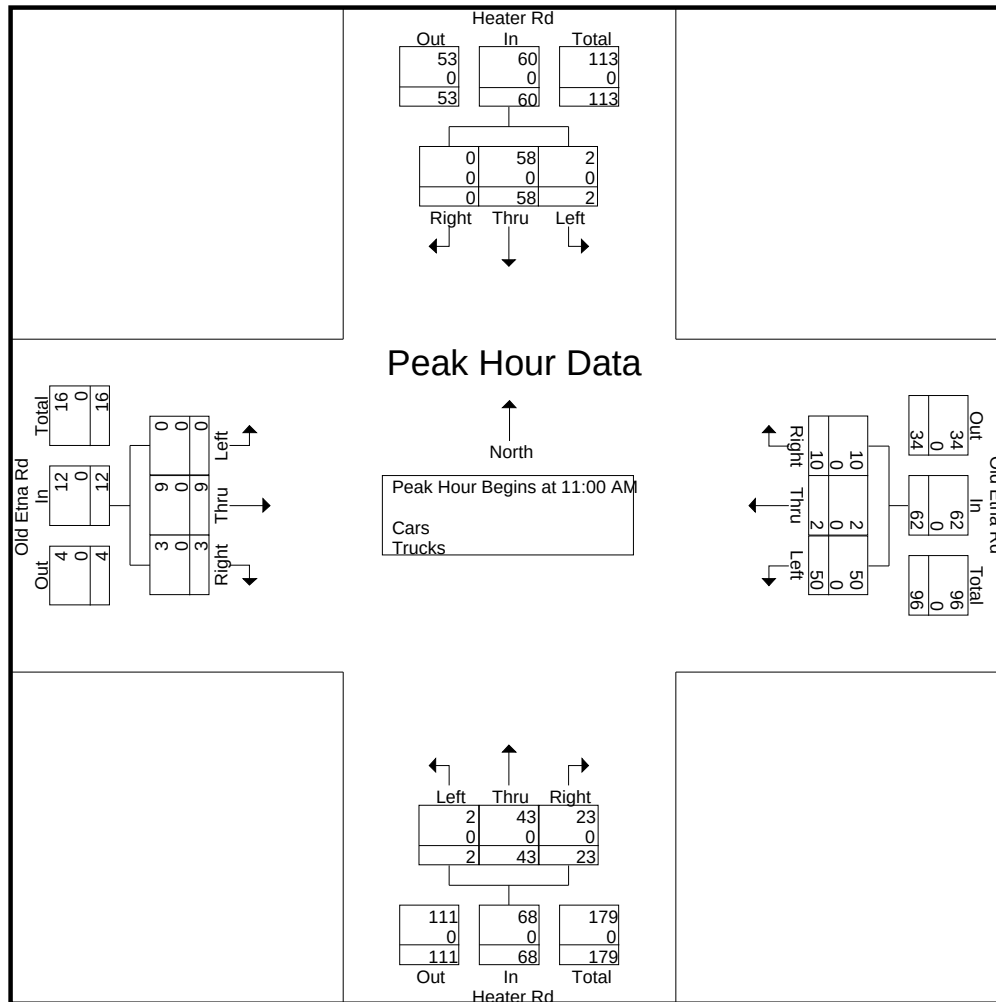
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	2	10	0	12	13	0	3	16	0	14	2	16	0	3	2	5	49
11:15 AM	0	16	0	16	14	0	5	19	1	14	8	23	0	3	0	3	61
11:30 AM	0	15	0	15	13	0	1	14	1	11	8	20	0	2	0	2	51
11:45 AM	0	17	0	17	10	2	1	13	0	4	5	9	0	1	1	2	41
Total Volume	2	58	0	60	50	2	10	62	2	43	23	68	0	9	3	12	202
% App. Total	3.3	96.7	0		80.6	3.2	16.1		2.9	63.2	33.8		0	75	25		
PHF	.250	.853	.000	.882	.893	.250	.500	.816	.500	.768	.719	.739	.000	.750	.375	.600	.828
Cars	2	58	0	60	50	2	10	62	2	43	23	68	0	9	3	12	202
% Cars	100	100	0	100	100	100	100	100	100	100	100	100	0	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S4
Site Code : 52933004
Start Date : 11/12/2022
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

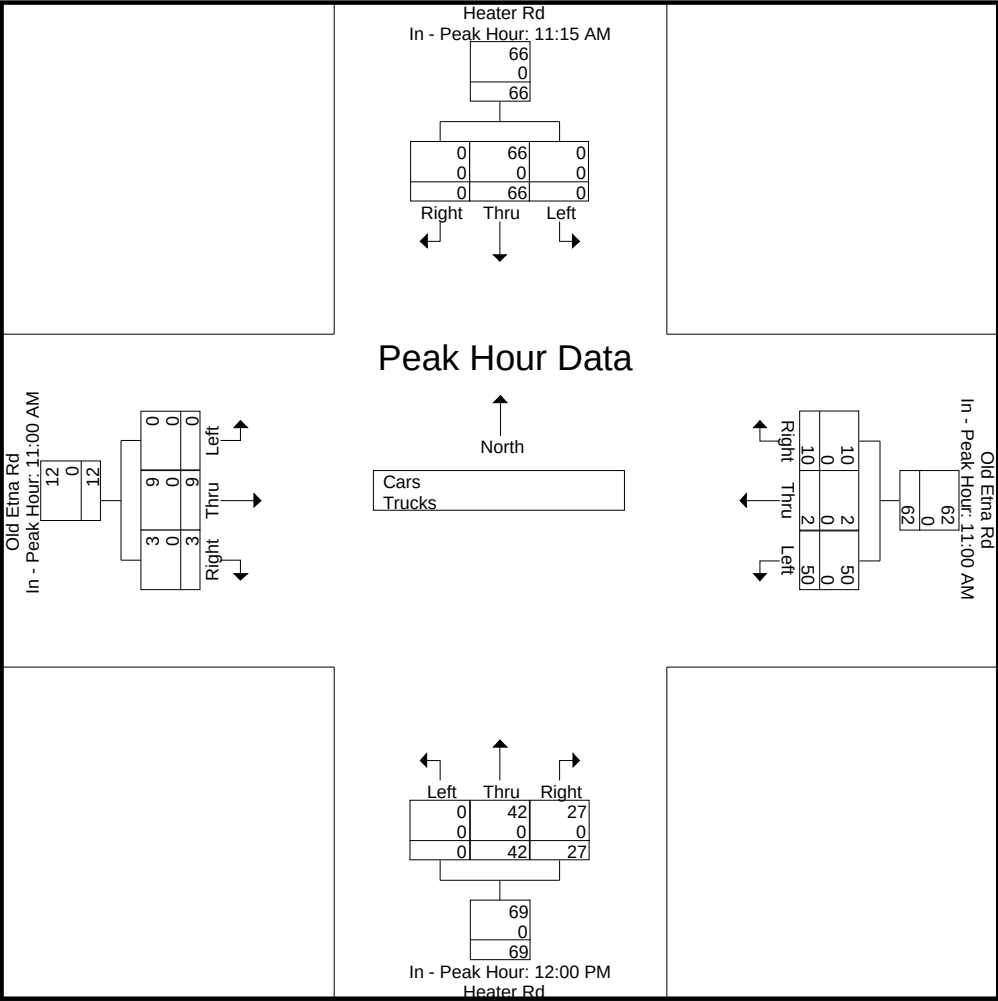
	11:15 AM				11:00 AM				12:00 PM				11:00 AM			
+0 mins.	0	16	0	16	13	0	3	16	0	11	3	14	0	3	2	5
+15 mins.	0	15	0	15	14	0	5	19	0	9	11	20	0	3	0	3
+30 mins.	0	17	0	17	13	0	1	14	0	10	6	16	0	2	0	2
+45 mins.	0	18	0	18	10	2	1	13	0	12	7	19	0	1	1	2
Total Volume	0	66	0	66	50	2	10	62	0	42	27	69	0	9	3	12
% App. Total	0	100	0		80.6	3.2	16.1		0	60.9	39.1		0	75	25	
PHF	.000	.917	.000	.917	.893	.250	.500	.816	.000	.875	.614	.863	.000	.750	.375	.600
Cars	0	66	0	66	50	2	10	62	0	42	27	69	0	9	3	12
% Cars	0	100	0	100	100	100	100	100	0	100	100	100	0	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Heater Road
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S4
 Site Code : 52933004
 Start Date : 11/12/2022
 Page No : 3



Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S4
Site Code : 52933004
Start Date : 11/12/2022
Page No : 4

Groups Printed- Cars

	Heater Rd From North			Old Etna Rd From East			Heater Rd From South			Old Etna Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	2	10	0	13	0	3	0	14	2	0	3	2	49
11:15 AM	0	16	0	14	0	5	1	14	8	0	3	0	61
11:30 AM	0	15	0	13	0	1	1	11	8	0	2	0	51
11:45 AM	0	17	0	10	2	1	0	4	5	0	1	1	41
Total	2	58	0	50	2	10	2	43	23	0	9	3	202
12:00 PM	0	18	0	6	0	2	0	11	3	0	1	1	42
12:15 PM	0	12	0	22	1	0	0	9	11	0	1	0	56
12:30 PM	2	14	1	12	0	1	0	10	6	0	2	0	48
12:45 PM	0	12	0	9	0	1	0	12	7	0	0	1	42
Total	2	56	1	49	1	4	0	42	27	0	4	2	188
Grand Total	4	114	1	99	3	14	2	85	50	0	13	5	390
Apprch %	3.4	95.8	0.8	85.3	2.6	12.1	1.5	62	36.5	0	72.2	27.8	
Total %	1	29.2	0.3	25.4	0.8	3.6	0.5	21.8	12.8	0	3.3	1.3	

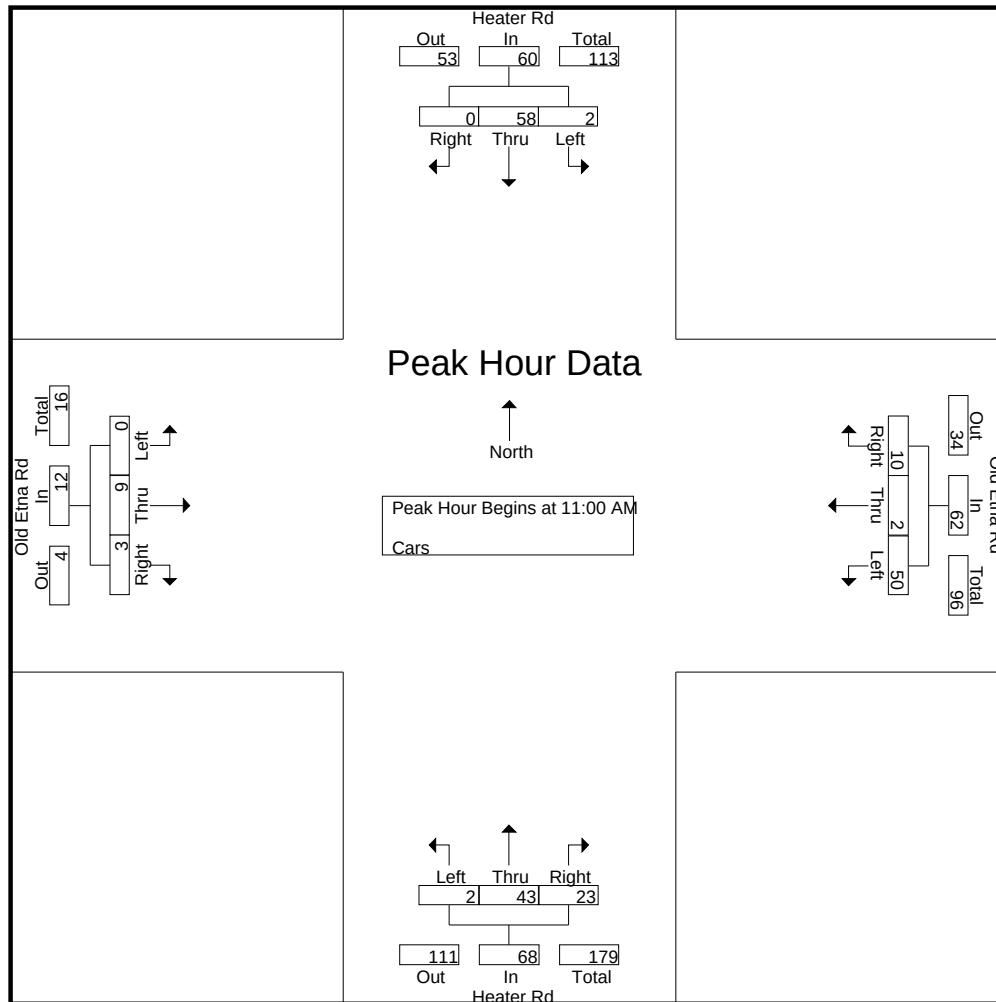
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	2	10	0	12	13	0	3	16	0	14	2	16	0	3	2	5	49
11:15 AM	0	16	0	16	14	0	5	19	1	14	8	23	0	3	0	3	61
11:30 AM	0	15	0	15	13	0	1	14	1	11	8	20	0	2	0	2	51
11:45 AM	0	17	0	17	10	2	1	13	0	4	5	9	0	1	1	2	41
Total Volume	2	58	0	60	50	2	10	62	2	43	23	68	0	9	3	12	202
% App. Total	3.3	96.7	0		80.6	3.2	16.1		2.9	63.2	33.8		0	75	25		
PHF	.250	.853	.000	.882	.893	.250	.500	.816	.500	.768	.719	.739	.000	.750	.375	.600	.828

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S4
Site Code : 52933004
Start Date : 11/12/2022
Page No : 5

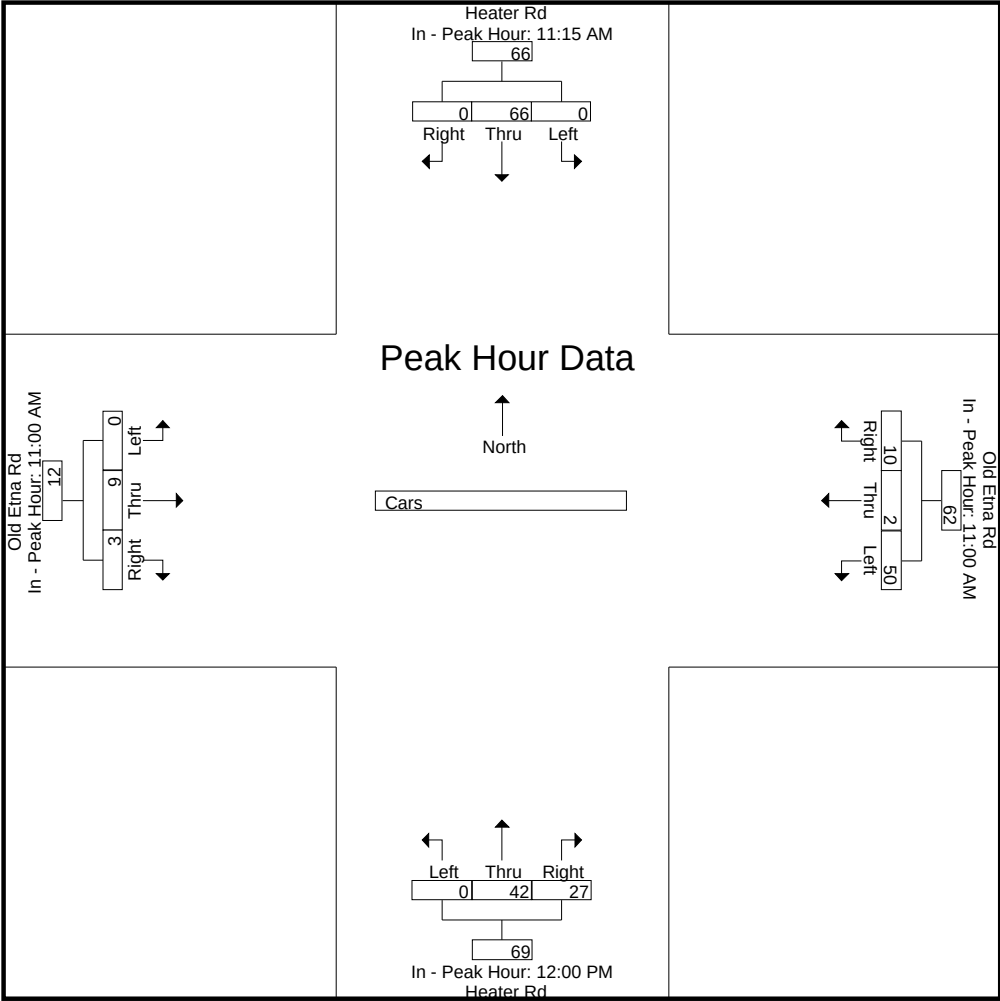


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:15 AM				11:00 AM				12:00 PM				11:00 AM			
+0 mins.	0	16	0	16	13	0	3	16	0	11	3	14	0	3	2	5
+15 mins.	0	15	0	15	14	0	5	19	0	9	11	20	0	3	0	3
+30 mins.	0	17	0	17	13	0	1	14	0	10	6	16	0	2	0	2
+45 mins.	0	18	0	18	10	2	1	13	0	12	7	19	0	1	1	2
Total Volume	0	66	0	66	50	2	10	62	0	42	27	69	0	9	3	12
% App. Total	0	100	0		80.6	3.2	16.1		0	60.9	39.1		0	75	25	
PHF	.000	.917	.000	.917	.893	.250	.500	.816	.000	.875	.614	.863	.000	.750	.375	.600

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S4
Site Code : 52933004
Start Date : 11/12/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Heater Road
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S4
 Site Code : 52933004
 Start Date : 11/12/2022
 Page No : 7

Groups Printed- Trucks

	Heater Rd From North			Old Etna Rd From East			Heater Rd From South			Old Etna Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	
Total %													

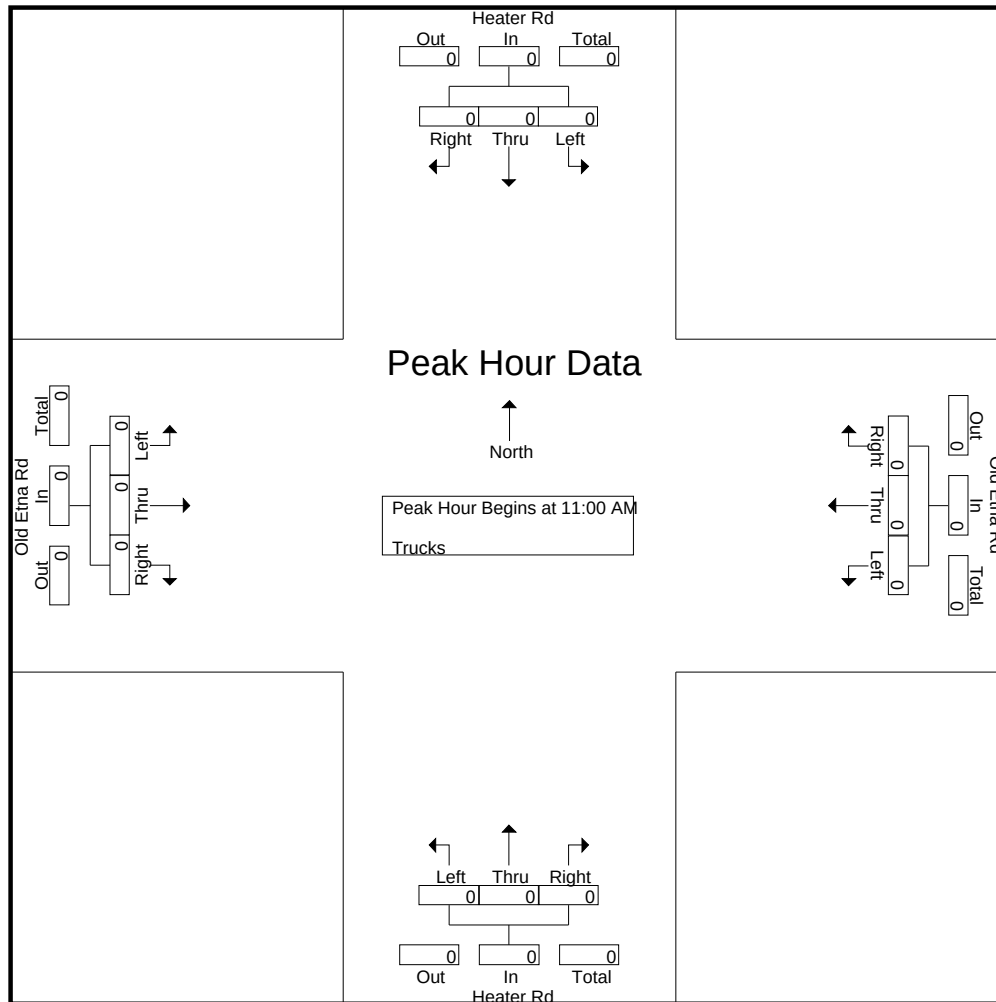
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Heater Road
 E/W Street : Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S4
 Site Code : 52933004
 Start Date : 11/12/2022
 Page No : 8

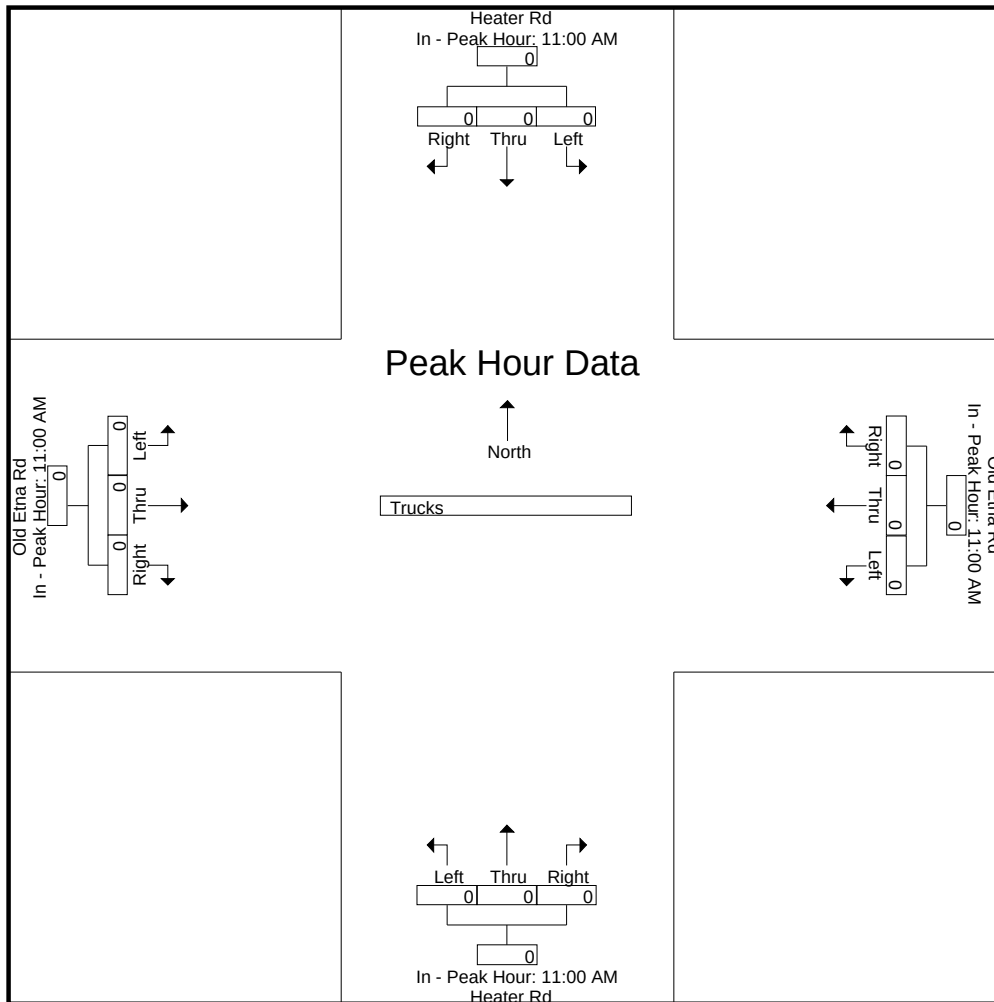


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	11:00 AM				11:00 AM				11:00 AM				11:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S4
Site Code : 52933004
Start Date : 11/12/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S4
Site Code : 52933004
Start Date : 11/12/2022
Page No : 10

Groups Printed- Bikes Peds

	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
11:00 AM	0	0	0	0	0	2	0	2	0	0	0	1	0	0	0	0	3	2	5
11:15 AM	0	0	0	0	0	1	0	2	0	0	0	7	0	1	0	0	9	2	11
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	3
11:45 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	4	0	4
Total	0	0	0	0	0	3	0	6	0	0	0	13	0	1	0	0	19	4	23
12:00 PM	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	1	5	0	5
12:15 PM	0	1	0	0	0	1	0	1	0	0	0	1	0	2	0	0	2	4	6
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Total	0	1	0	1	0	1	0	1	0	0	0	6	0	2	0	1	9	4	13
Grand Total	0	1	0	1	0	4	0	7	0	0	0	19	0	3	0	1	28	8	36
Apprch %	0	100	0		0	100	0		0	0	0		0	100	0				
Total %	0	12.5	0		0	50	0		0	0	0		0	37.5	0		77.8	22.2	

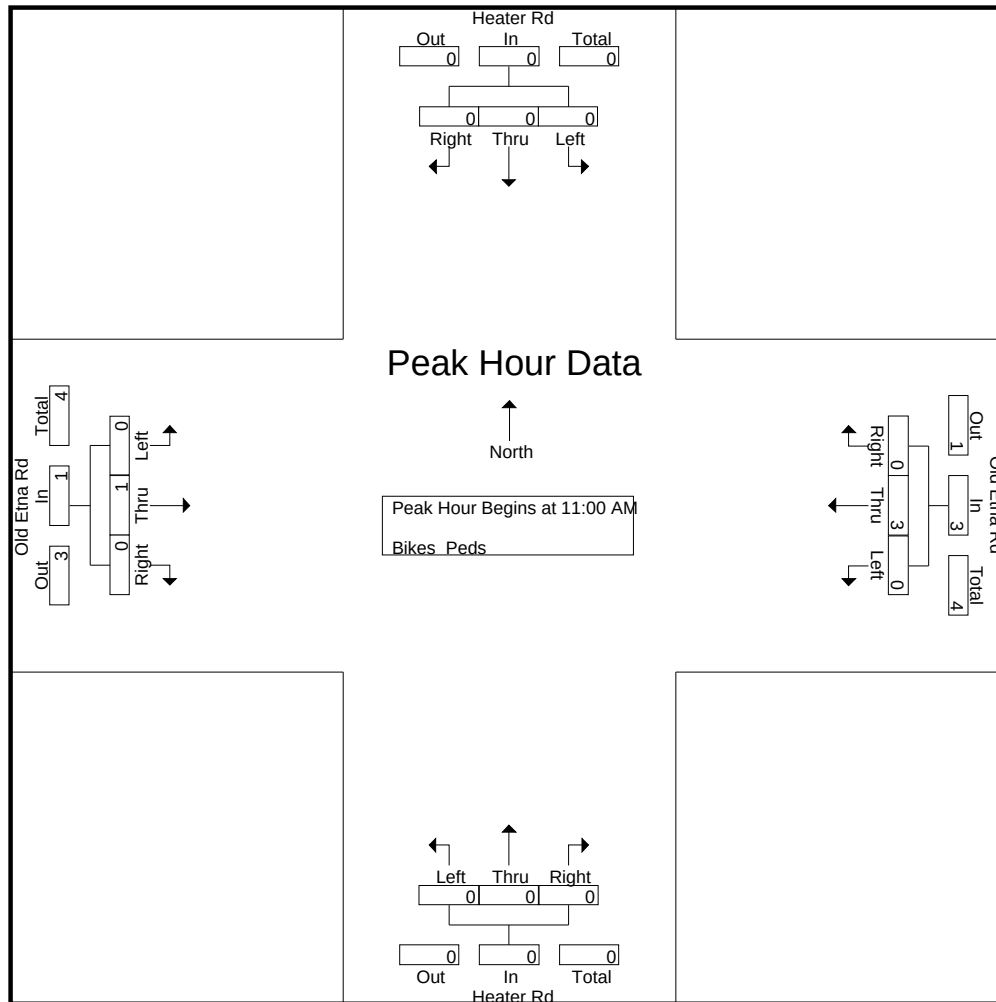
	Heater Rd From North				Old Etna Rd From East				Heater Rd From South				Old Etna Rd From West						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total		
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:00 AM																			
11:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	2	
11:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	2	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4		
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0				
PHF	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	.250	.000	.250	.500		

Accurate Counts

978-664-2565

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S4
Site Code : 52933004
Start Date : 11/12/2022
Page No : 11

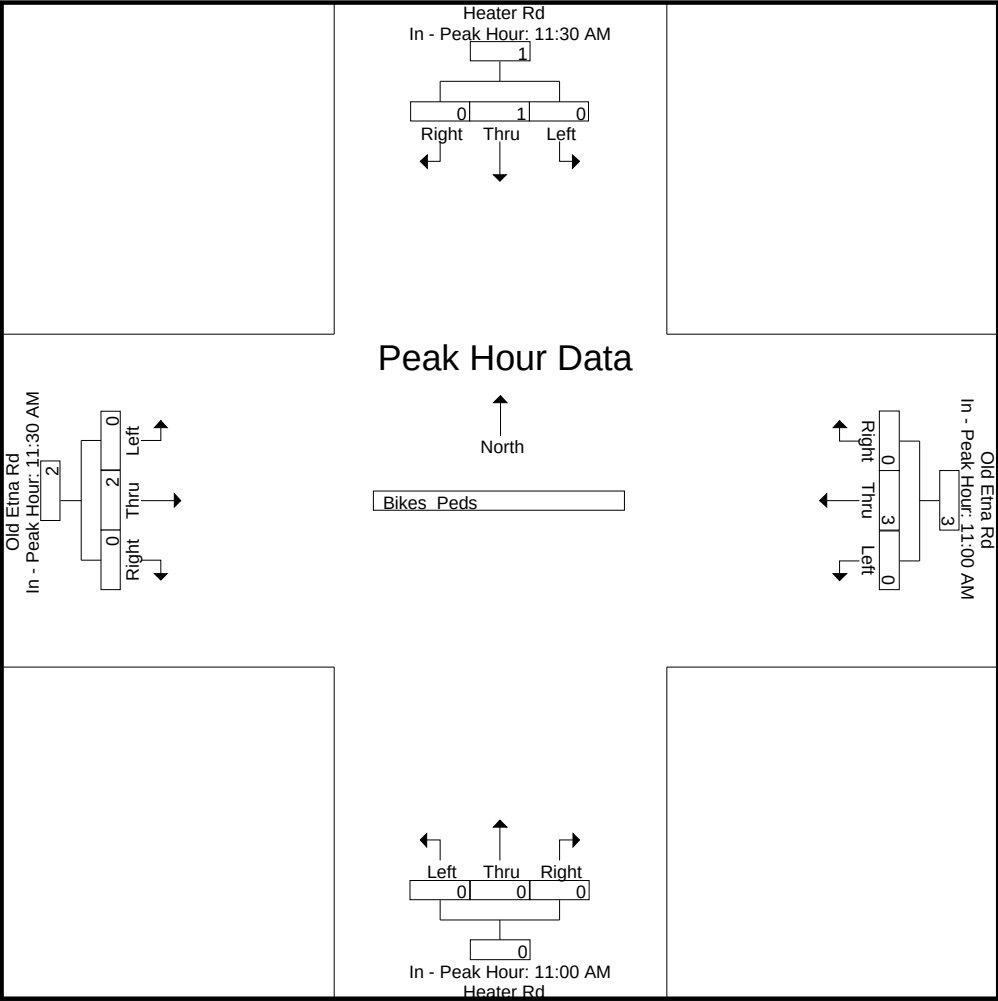


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:30 AM				11:00 AM				11:00 AM				11:30 AM			
+0 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2
Total Volume	0	1	0	1	0	3	0	3	0	0	0	0	0	2	0	2
% App. Total	0	100	0		0	100	0		0	0	0		0	100	0	
PHF	.000	.250	.000	.250	.000	.375	.000	.375	.000	.000	.000	.000	.000	.250	.000	.250

N/S Street : Heater Road
E/W Street : Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S4
Site Code : 52933004
Start Date : 11/12/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

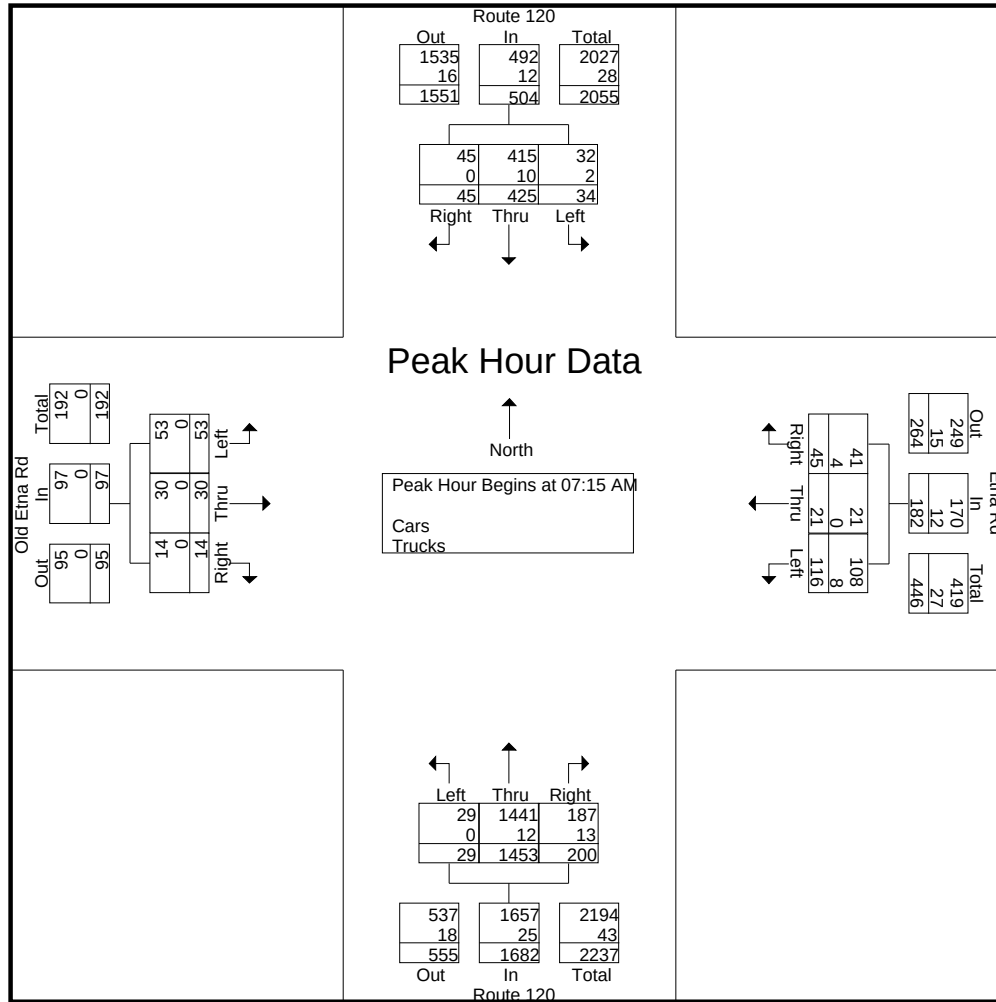
	Route 120 From North			Etna Rd From East			Route 120 From South			Old Etna Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	5	68	5	72	8	6	4	251	41	7	5	3	475
07:15 AM	4	88	12	33	4	10	12	317	40	10	8	2	540
07:30 AM	6	111	8	32	4	12	4	389	43	15	3	5	632
07:45 AM	11	108	10	27	6	11	7	412	69	17	11	3	692
Total	26	375	35	164	22	39	27	1369	193	49	27	13	2339
08:00 AM	13	118	15	24	7	12	6	335	48	11	8	4	601
08:15 AM	12	77	10	21	3	7	5	314	58	8	4	2	521
08:30 AM	14	90	6	34	0	13	11	261	37	9	2	8	485
08:45 AM	11	89	10	18	2	16	8	236	38	8	3	8	447
Total	50	374	41	97	12	48	30	1146	181	36	17	22	2054
Grand Total	76	749	76	261	34	87	57	2515	374	85	44	35	4393
Apprch %	8.4	83.1	8.4	68.3	8.9	22.8	1.9	85.4	12.7	51.8	26.8	21.3	
Total %	1.7	17	1.7	5.9	0.8	2	1.3	57.3	8.5	1.9	1	0.8	
Cars	67	733	76	245	34	77	57	2490	354	85	43	35	4296
% Cars	88.2	97.9	100	93.9	100	88.5	100	99	94.7	100	97.7	100	97.8
Trucks	9	16	0	16	0	10	0	25	20	0	1	0	97
% Trucks	11.8	2.1	0	6.1	0	11.5	0	1	5.3	0	2.3	0	2.2

	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	4	88	12	104	33	4	10	47	12	317	40	369	10	8	2	20	540
07:30 AM	6	111	8	125	32	4	12	48	4	389	43	436	15	3	5	23	632
07:45 AM	11	108	10	129	27	6	11	44	7	412	69	488	17	11	3	31	692
08:00 AM	13	118	15	146	24	7	12	43	6	335	48	389	11	8	4	23	601
Total Volume	34	425	45	504	116	21	45	182	29	1453	200	1682	53	30	14	97	2465
% App. Total	6.7	84.3	8.9		63.7	11.5	24.7		1.7	86.4	11.9		54.6	30.9	14.4		
PHF	.654	.900	.750	.863	.879	.750	.938	.948	.604	.882	.725	.862	.779	.682	.700	.782	.891
Cars	32	415	45	492	108	21	41	170	29	1441	187	1657	53	30	14	97	2416
% Cars	94.1	97.6	100	97.6	93.1	100	91.1	93.4	100	99.2	93.5	98.5	100	100	100	100	98.0
Trucks	2	10	0	12	8	0	4	12	0	12	13	25	0	0	0	0	49
% Trucks	5.9	2.4	0	2.4	6.9	0	8.9	6.6	0	0.8	6.5	1.5	0	0	0	0	2.0

Accurate Counts
978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 2

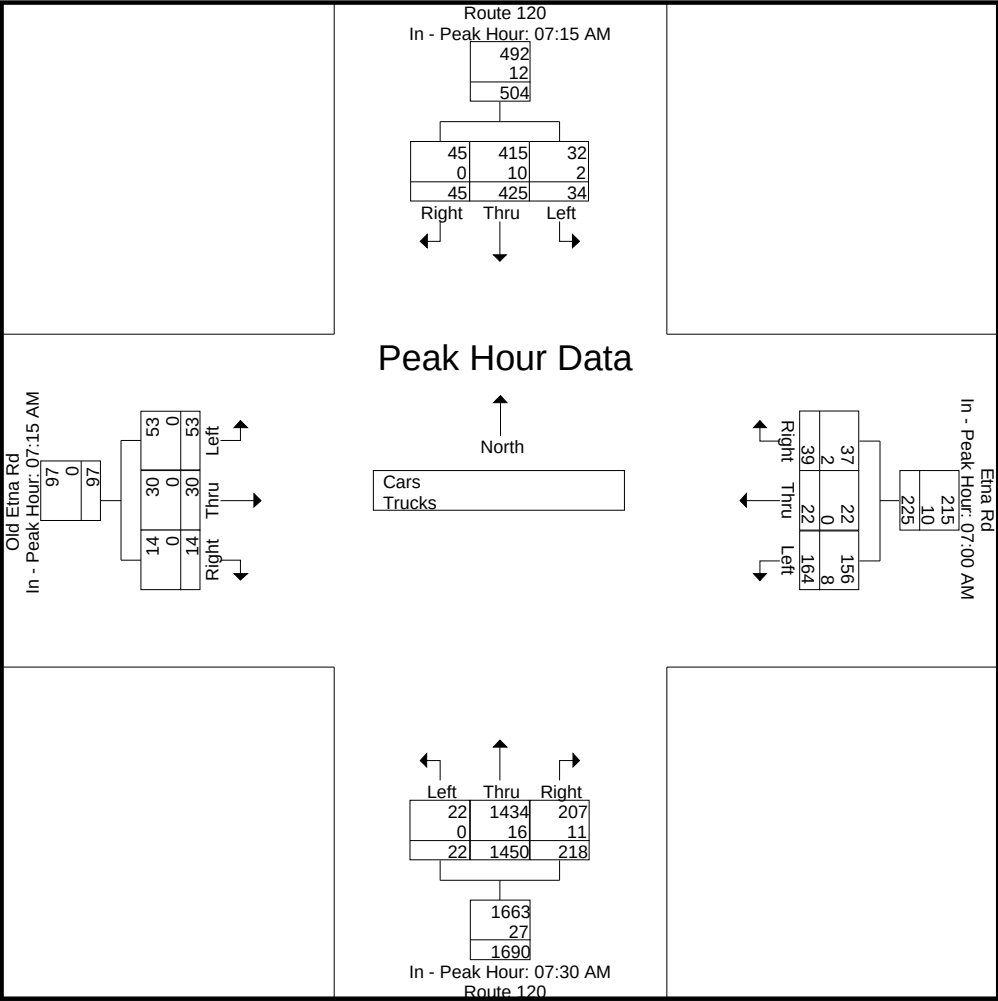


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:30 AM				07:15 AM			
+0 mins.	4	88	12	104	72	8	6	86	4	389	43	436	10	8	2	20
+15 mins.	6	111	8	125	33	4	10	47	7	412	69	488	15	3	5	23
+30 mins.	11	108	10	129	32	4	12	48	6	335	48	389	17	11	3	31
+45 mins.	13	118	15	146	27	6	11	44	5	314	58	377	11	8	4	23
Total Volume	34	425	45	504	164	22	39	225	22	1450	218	1690	53	30	14	97
% App. Total	6.7	84.3	8.9		72.9	9.8	17.3		1.3	85.8	12.9		54.6	30.9	14.4	
PHF	.654	.900	.750	.863	.569	.688	.813	.654	.786	.880	.790	.866	.779	.682	.700	.782
Cars	32	415	45	492	156	22	37	215	22	1434	207	1663	53	30	14	97
% Cars	94.1	97.6	100	97.6	95.1	100	94.9	95.6	100	98.9	95	98.4	100	100	100	100
Trucks	2	10	0	12	8	0	2	10	0	16	11	27	0	0	0	0
% Trucks	5.9	2.4	0	2.4	4.9	0	5.1	4.4	0	1.1	5	1.6	0	0	0	0

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 4

Groups Printed- Cars

	Route 120 From North			Etna Rd From East			Route 120 From South			Old Etna Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	5	68	5	71	8	5	4	251	40	7	4	3	471
07:15 AM	4	87	12	32	4	10	12	315	37	10	8	2	533
07:30 AM	5	109	8	28	4	11	4	386	41	15	3	5	619
07:45 AM	10	105	10	25	6	11	7	407	64	17	11	3	676
Total	24	369	35	156	22	37	27	1359	182	49	26	13	2299
08:00 AM	13	114	15	23	7	9	6	333	45	11	8	4	588
08:15 AM	10	76	10	21	3	6	5	308	57	8	4	2	510
08:30 AM	12	89	6	29	0	12	11	255	35	9	2	8	468
08:45 AM	8	85	10	16	2	13	8	235	35	8	3	8	431
Total	43	364	41	89	12	40	30	1131	172	36	17	22	1997
Grand Total	67	733	76	245	34	77	57	2490	354	85	43	35	4296
Apprch %	7.6	83.7	8.7	68.8	9.6	21.6	2	85.8	12.2	52.1	26.4	21.5	
Total %	1.6	17.1	1.8	5.7	0.8	1.8	1.3	58	8.2	2	1	0.8	

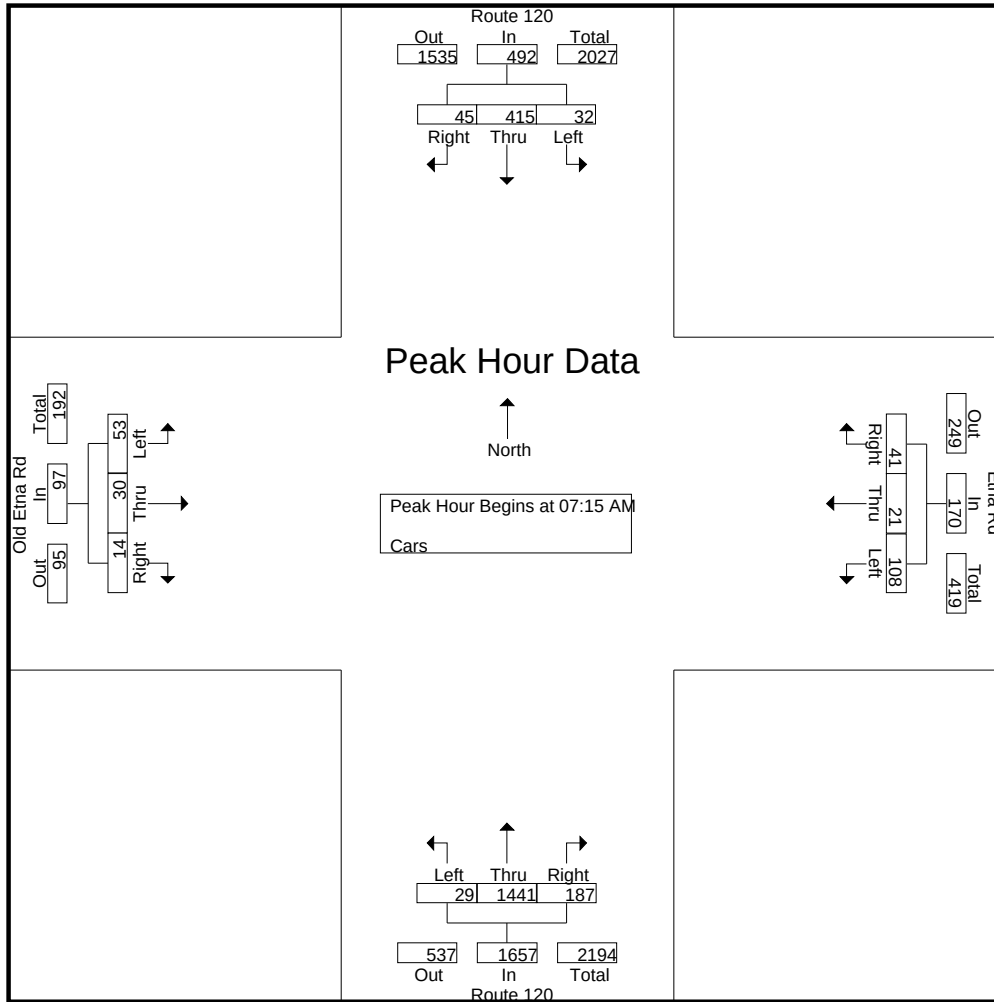
	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	4	87	12	103	32	4	10	46	12	315	37	364	10	8	2	20	533
07:30 AM	5	109	8	122	28	4	11	43	4	386	41	431	15	3	5	23	619
07:45 AM	10	105	10	125	25	6	11	42	7	407	64	478	17	11	3	31	676
08:00 AM	13	114	15	142	23	7	9	39	6	333	45	384	11	8	4	23	588
Total Volume	32	415	45	492	108	21	41	170	29	1441	187	1657	53	30	14	97	2416
% App. Total	6.5	84.3	9.1		63.5	12.4	24.1		1.8	87	11.3		54.6	30.9	14.4		
PHF	.615	.910	.750	.866	.844	.750	.932	.924	.604	.885	.730	.867	.779	.682	.700	.782	.893

Accurate Counts

978-664-2565

N/S Street : Route 120
 E/W Street : Etna Road/Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933005
 Site Code : 52933005
 Start Date : 11/10/2022
 Page No : 5

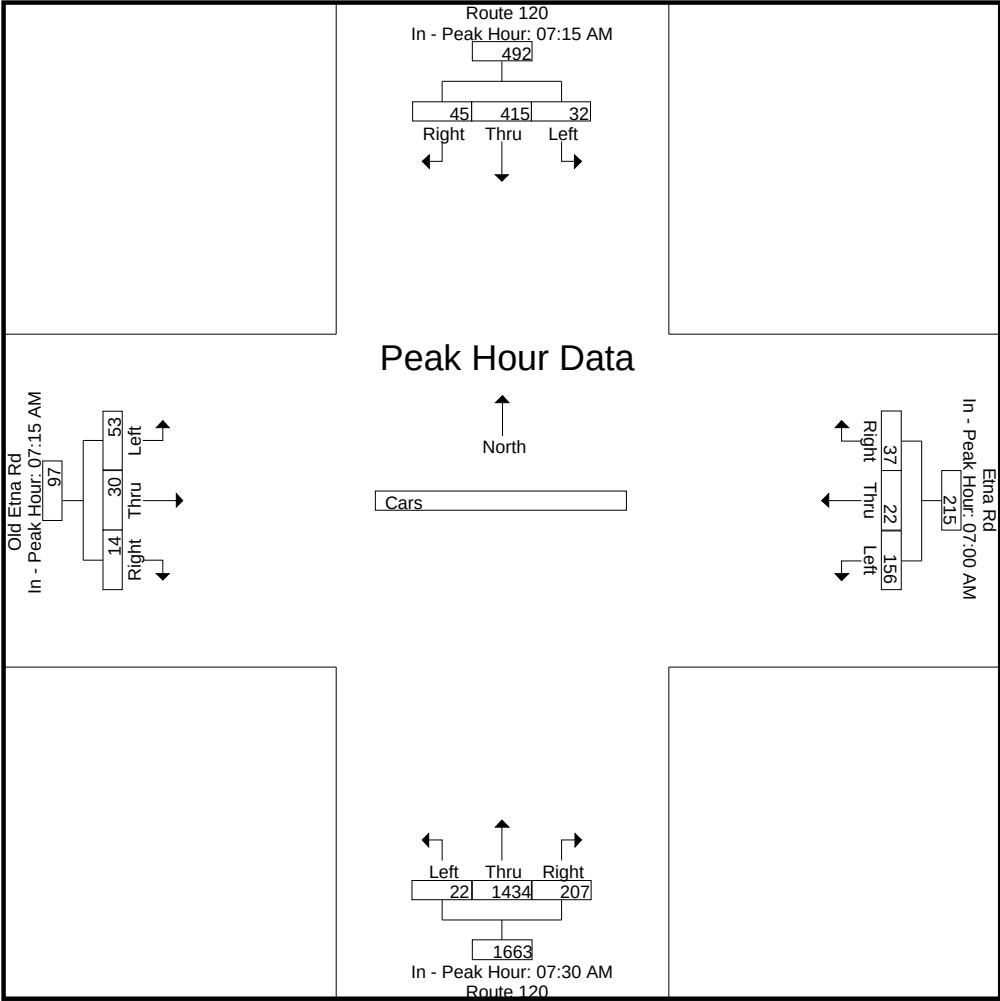


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:30 AM				07:15 AM			
+0 mins.	4	87	12	103	71	8	5	84	4	386	41	431	10	8	2	20
+15 mins.	5	109	8	122	32	4	10	46	7	407	64	478	15	3	5	23
+30 mins.	10	105	10	125	28	4	11	43	6	333	45	384	17	11	3	31
+45 mins.	13	114	15	142	25	6	11	42	5	308	57	370	11	8	4	23
Total Volume	32	415	45	492	156	22	37	215	22	1434	207	1663	53	30	14	97
% App. Total	6.5	84.3	9.1		72.6	10.2	17.2		1.3	86.2	12.4		54.6	30.9	14.4	
PHF	.615	.910	.750	.866	.549	.688	.841	.640	.786	.881	.809	.870	.779	.682	.700	.782

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 7

Groups Printed- Trucks

	Route 120 From North			Etna Rd From East			Route 120 From South			Old Etna Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	0	0	1	0	1	0	0	1	0	1	0	4
07:15 AM	0	1	0	1	0	0	0	2	3	0	0	0	7
07:30 AM	1	2	0	4	0	1	0	3	2	0	0	0	13
07:45 AM	1	3	0	2	0	0	0	5	5	0	0	0	16
Total	2	6	0	8	0	2	0	10	11	0	1	0	40
08:00 AM	0	4	0	1	0	3	0	2	3	0	0	0	13
08:15 AM	2	1	0	0	0	1	0	6	1	0	0	0	11
08:30 AM	2	1	0	5	0	1	0	6	2	0	0	0	17
08:45 AM	3	4	0	2	0	3	0	1	3	0	0	0	16
Total	7	10	0	8	0	8	0	15	9	0	0	0	57
Grand Total	9	16	0	16	0	10	0	25	20	0	1	0	97
Apprch %	36	64	0	61.5	0	38.5	0	55.6	44.4	0	100	0	
Total %	9.3	16.5	0	16.5	0	10.3	0	25.8	20.6	0	1	0	

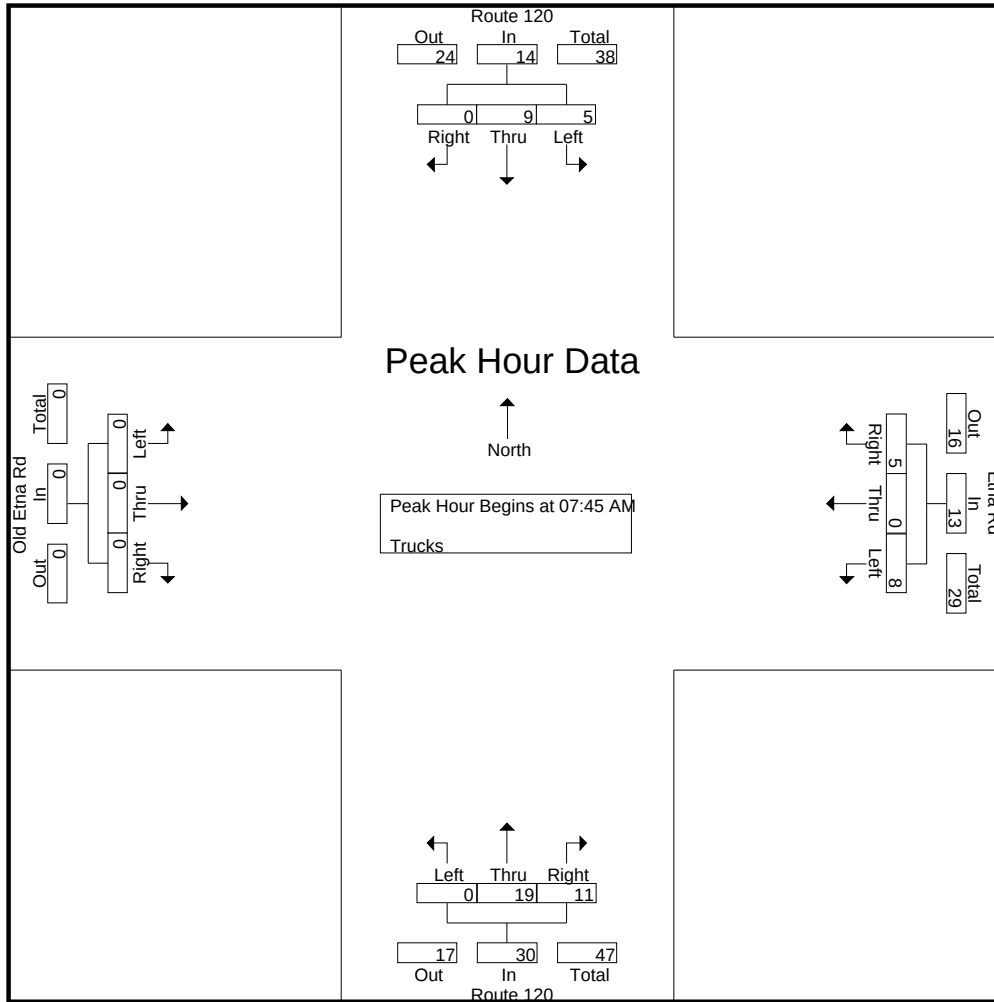
	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	1	3	0	4	2	0	0	2	0	5	5	10	0	0	0	0	16
08:00 AM	0	4	0	4	1	0	3	4	0	2	3	5	0	0	0	0	13
08:15 AM	2	1	0	3	0	0	1	1	0	6	1	7	0	0	0	0	11
08:30 AM	2	1	0	3	5	0	1	6	0	6	2	8	0	0	0	0	17
Total Volume	5	9	0	14	8	0	5	13	0	19	11	30	0	0	0	0	57
% App. Total	35.7	64.3	0		61.5	0	38.5		0	63.3	36.7		0	0	0		
PHF	.625	.563	.000	.875	.400	.000	.417	.542	.000	.792	.550	.750	.000	.000	.000	.000	.838

Accurate Counts

978-664-2565

N/S Street : Route 120
 E/W Street : Etna Road/Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933005
 Site Code : 52933005
 Start Date : 11/10/2022
 Page No : 8

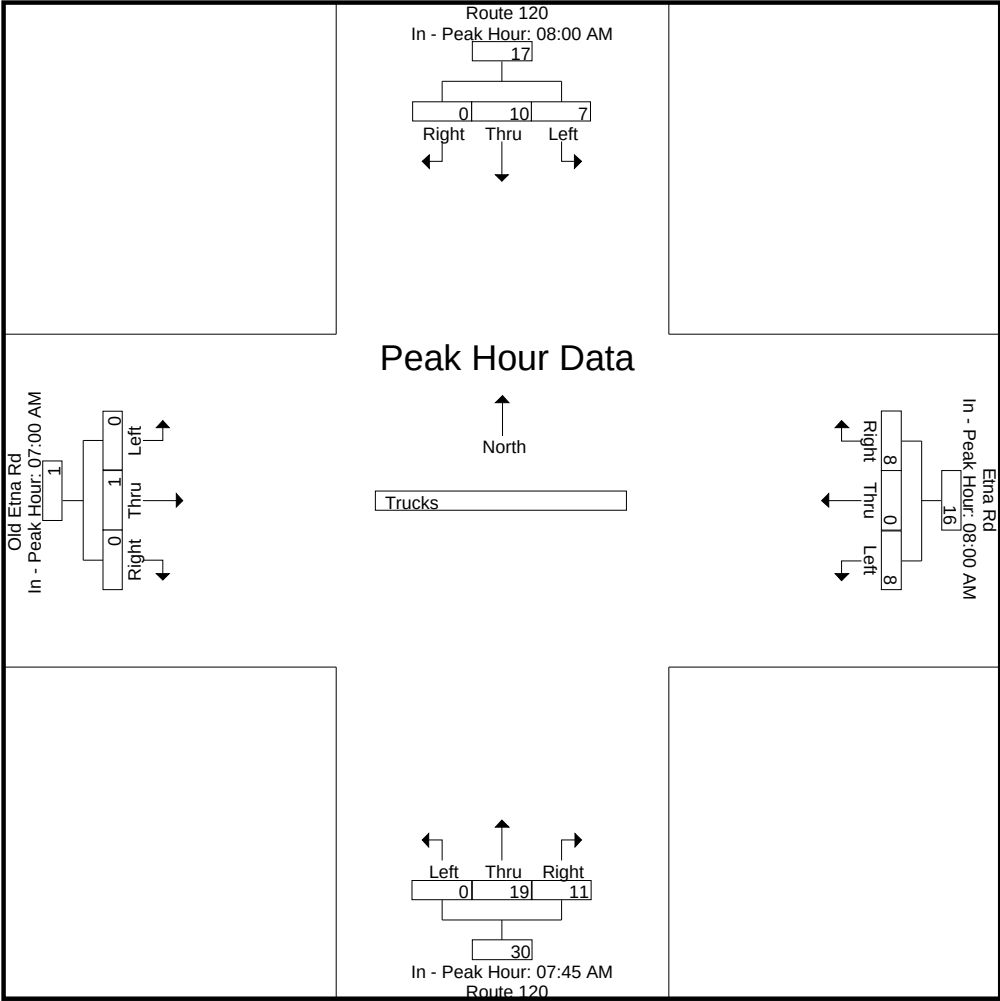


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				07:45 AM				07:00 AM			
+0 mins.	0	4	0	4	1	0	3	4	0	5	5	10	0	1	0	1
+15 mins.	2	1	0	3	0	0	1	1	0	2	3	5	0	0	0	0
+30 mins.	2	1	0	3	5	0	1	6	0	6	1	7	0	0	0	0
+45 mins.	3	4	0	7	2	0	3	5	0	6	2	8	0	0	0	0
Total Volume	7	10	0	17	8	0	8	16	0	19	11	30	0	1	0	1
% App. Total	41.2	58.8	0		50	0	50		0	63.3	36.7		0	100	0	
PHF	.583	.625	.000	.607	.400	.000	.667	.667	.000	.792	.550	.750	.000	.250	.000	.250

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 10

Groups Printed- Bikes Peds

	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
07:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
07:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
08:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Grand Total	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
Apprch %	0	50	50		0	0	0		0	0	0		0	0	0				
Total %	0	50	50		0	0	0		0	0	0		0	0	0		50	50	

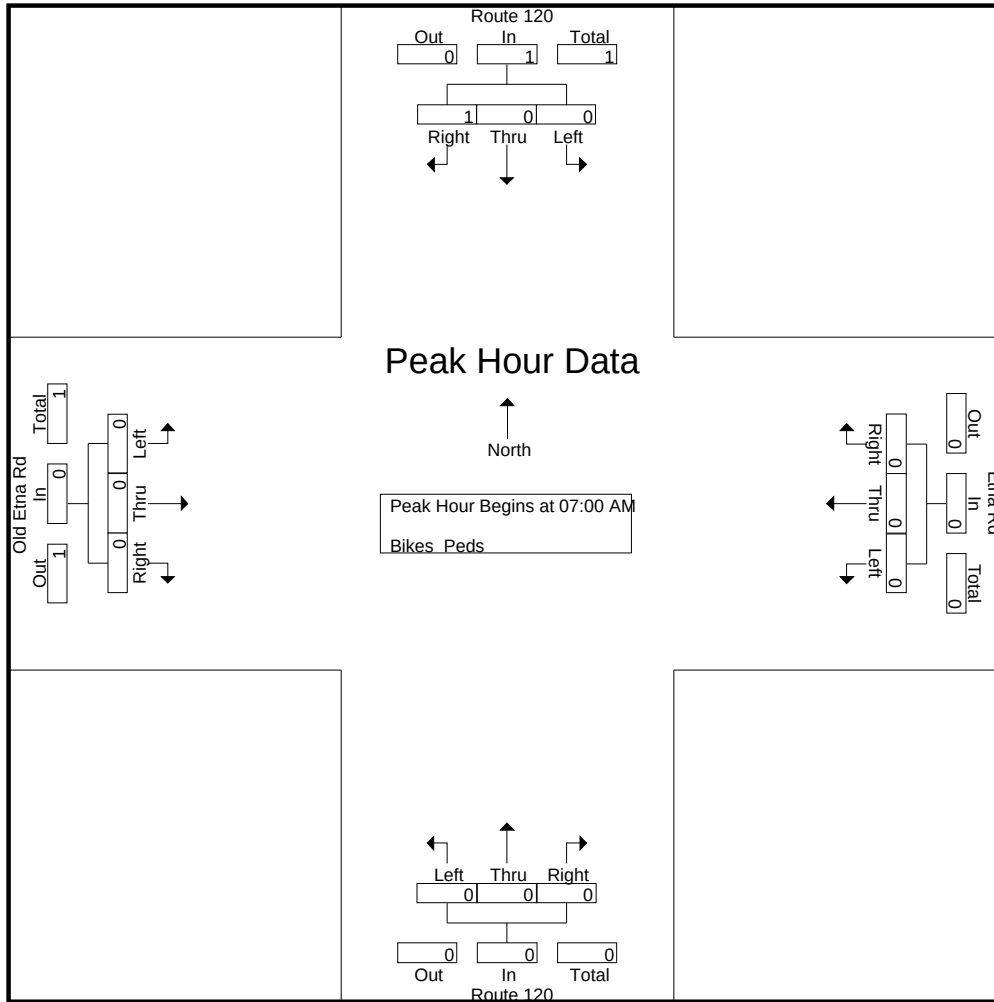
	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	0	100		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Route 120
 E/W Street : Etna Road/Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933005
 Site Code : 52933005
 Start Date : 11/10/2022
 Page No : 11

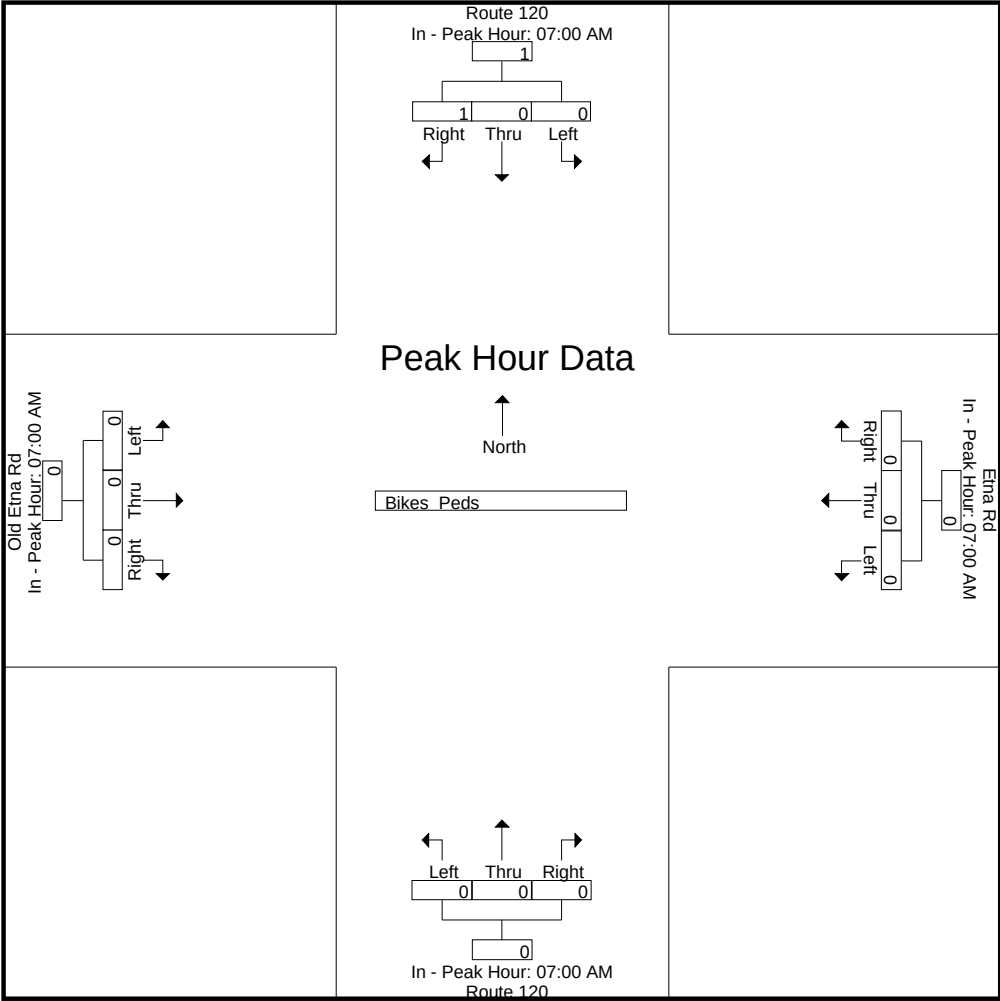


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	100		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

	Route 120 From North			Etna Rd From East			Route 120 From South			Old Etna Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
02:00 PM	10	192	10	39	2	10	3	152	35	4	2	13	472
02:15 PM	6	191	13	39	5	13	10	146	28	11	3	8	473
02:30 PM	7	203	9	74	5	14	12	143	44	13	8	11	543
02:45 PM	9	232	16	46	3	6	16	158	64	6	8	15	579
Total	32	818	48	198	15	43	41	599	171	34	21	47	2067
03:00 PM	7	228	10	74	4	13	4	116	32	12	8	19	527
03:15 PM	12	276	11	59	8	13	5	121	29	8	6	10	558
03:30 PM	7	316	12	69	4	11	4	121	17	10	5	7	583
03:45 PM	7	273	8	46	7	11	8	111	28	5	6	10	520
Total	33	1093	41	248	23	48	21	469	106	35	25	46	2188
04:00 PM	18	324	6	59	5	9	5	119	29	8	3	14	599
04:15 PM	9	311	7	53	5	10	6	106	19	6	2	14	548
04:30 PM	14	324	4	58	0	10	3	120	21	9	2	14	579
04:45 PM	6	331	8	44	3	8	2	135	27	6	6	12	588
Total	47	1290	25	214	13	37	16	480	96	29	13	54	2314
05:00 PM	14	329	10	51	4	7	4	129	24	11	5	12	600
05:15 PM	8	345	7	34	1	13	2	147	19	5	5	6	592
05:30 PM	7	260	3	34	1	5	3	90	23	4	0	2	432
05:45 PM	12	201	1	23	1	7	0	102	18	5	0	2	372
Total	41	1135	21	142	7	32	9	468	84	25	10	22	1996
Grand Total	153	4336	135	802	58	160	87	2016	457	123	69	169	8565
Apprch %	3.3	93.8	2.9	78.6	5.7	15.7	3.4	78.8	17.9	34.1	19.1	46.8	
Total %	1.8	50.6	1.6	9.4	0.7	1.9	1	23.5	5.3	1.4	0.8	2	
Cars	145	4316	134	789	58	148	87	2001	437	122	69	169	8475
% Cars	94.8	99.5	99.3	98.4	100	92.5	100	99.3	95.6	99.2	100	100	98.9
Trucks	8	20	1	13	0	12	0	15	20	1	0	0	90
% Trucks	5.2	0.5	0.7	1.6	0	7.5	0	0.7	4.4	0.8	0	0	1.1

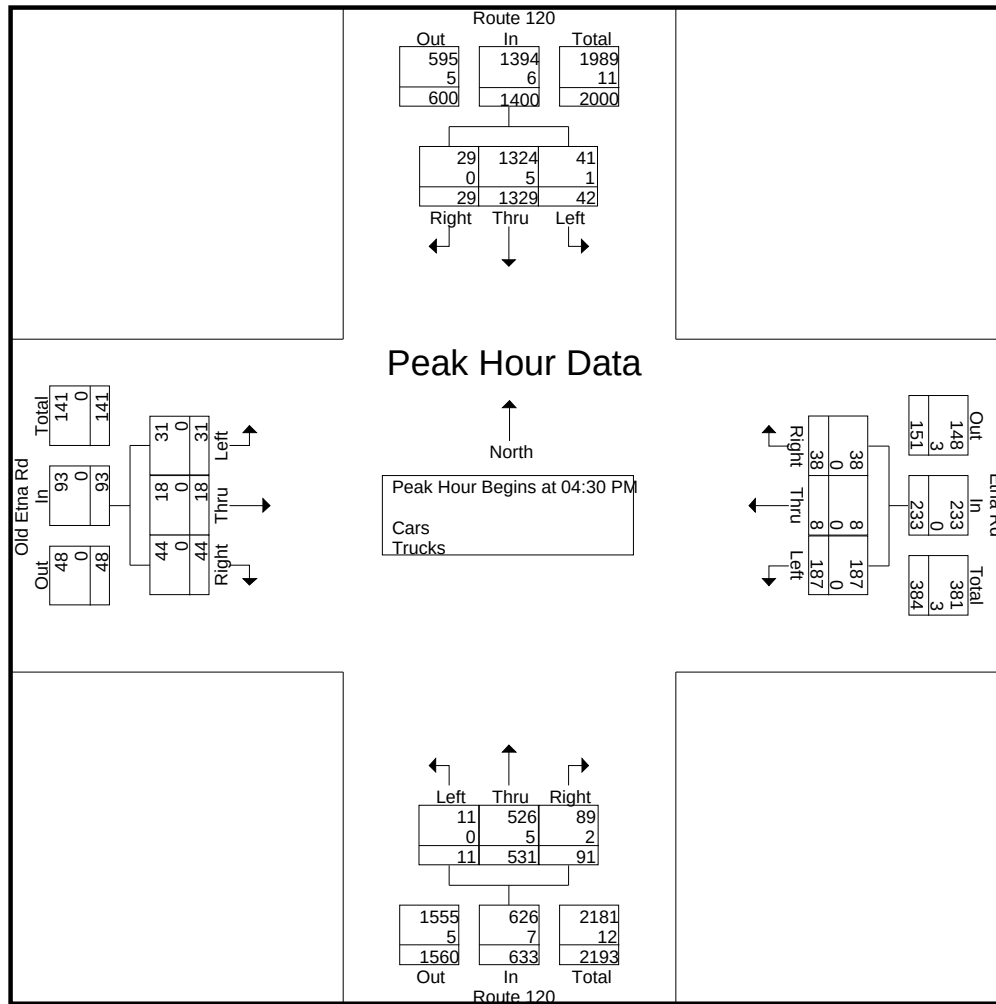
	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	14	324	4	342	58	0	10	68	3	120	21	144	9	2	14	25	579
04:45 PM	6	331	8	345	44	3	8	55	2	135	27	164	6	6	12	24	588
05:00 PM	14	329	10	353	51	4	7	62	4	129	24	157	11	5	12	28	600
05:15 PM	8	345	7	360	34	1	13	48	2	147	19	168	5	5	6	16	592
Total Volume	42	1329	29	1400	187	8	38	233	11	531	91	633	31	18	44	93	2359
% App. Total	3	94.9	2.1		80.3	3.4	16.3		1.7	83.9	14.4		33.3	19.4	47.3		
PHF	.750	.963	.725	.972	.806	.500	.731	.857	.688	.903	.843	.942	.705	.750	.786	.830	.983
Cars	41	1324	29	1394	187	8	38	233	11	526	89	626	31	18	44	93	2346
% Cars	97.6	99.6	100	99.6	100	100	100	100	100	99.1	97.8	98.9	100	100	100	100	99.4
Trucks	1	5	0	6	0	0	0	0	0	5	2	7	0	0	0	0	13
% Trucks	2.4	0.4	0	0.4	0	0	0	0	0	0.9	2.2	1.1	0	0	0	0	0.6

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 2

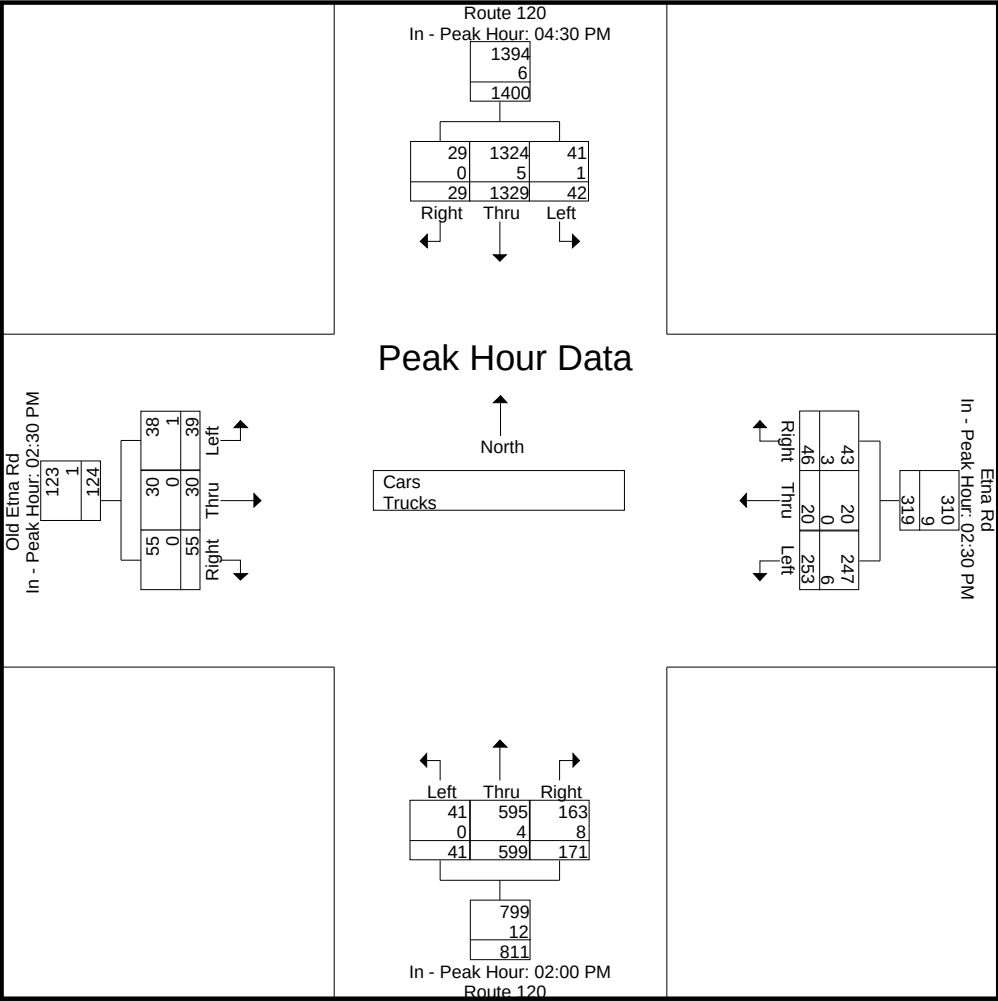


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				02:30 PM				02:00 PM				02:30 PM			
+0 mins.	14	324	4	342	74	5	14	93	3	152	35	190	13	8	11	32
+15 mins.	6	331	8	345	46	3	6	55	10	146	28	184	6	8	15	29
+30 mins.	14	329	10	353	74	4	13	91	12	143	44	199	12	8	19	39
+45 mins.	8	345	7	360	59	8	13	80	16	158	64	238	8	6	10	24
Total Volume	42	1329	29	1400	253	20	46	319	41	599	171	811	39	30	55	124
% App. Total	3	94.9	2.1		79.3	6.3	14.4		5.1	73.9	21.1		31.5	24.2	44.4	
PHF	.750	.963	.725	.972	.855	.625	.821	.858	.641	.948	.668	.852	.750	.938	.724	.795
Cars	41	1324	29	1394	247	20	43	310	41	595	163	799	38	30	55	123
% Cars	97.6	99.6	100	99.6	97.6	100	93.5	97.2	100	99.3	95.3	98.5	97.4	100	100	99.2
Trucks	1	5	0	6	6	0	3	9	0	4	8	12	1	0	0	1
% Trucks	2.4	0.4	0	0.4	2.4	0	6.5	2.8	0	0.7	4.7	1.5	2.6	0	0	0.8

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 4

Groups Printed- Cars

	Route 120 From North			Etna Rd From East			Route 120 From South			Old Etna Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
02:00 PM	6	187	10	39	2	8	3	152	32	4	2	13	458
02:15 PM	6	189	13	39	5	10	10	143	26	11	3	8	463
02:30 PM	7	202	9	72	5	12	12	142	42	13	8	11	535
02:45 PM	9	228	16	43	3	6	16	158	63	5	8	15	570
Total	28	806	48	193	15	36	41	595	163	33	21	47	2026
03:00 PM	6	228	10	73	4	13	4	115	31	12	8	19	523
03:15 PM	11	276	11	59	8	12	5	121	26	8	6	10	553
03:30 PM	7	315	12	67	4	10	4	119	15	10	5	7	575
03:45 PM	7	272	7	45	7	11	8	110	27	5	6	10	515
Total	31	1091	40	244	23	46	21	465	99	35	25	46	2166
04:00 PM	17	324	6	56	5	6	5	118	28	8	3	14	590
04:15 PM	9	310	7	53	5	10	6	106	19	6	2	14	547
04:30 PM	14	323	4	58	0	10	3	118	21	9	2	14	576
04:45 PM	5	330	8	44	3	8	2	134	26	6	6	12	584
Total	45	1287	25	211	13	34	16	476	94	29	13	54	2297
05:00 PM	14	329	10	51	4	7	4	128	24	11	5	12	599
05:15 PM	8	342	7	34	1	13	2	146	18	5	5	6	587
05:30 PM	7	260	3	33	1	5	3	90	22	4	0	2	430
05:45 PM	12	201	1	23	1	7	0	101	17	5	0	2	370
Total	41	1132	21	141	7	32	9	465	81	25	10	22	1986
Grand Total	145	4316	134	789	58	148	87	2001	437	122	69	169	8475
Apprch %	3.2	93.9	2.9	79.3	5.8	14.9	3.4	79.2	17.3	33.9	19.2	46.9	
Total %	1.7	50.9	1.6	9.3	0.7	1.7	1	23.6	5.2	1.4	0.8	2	

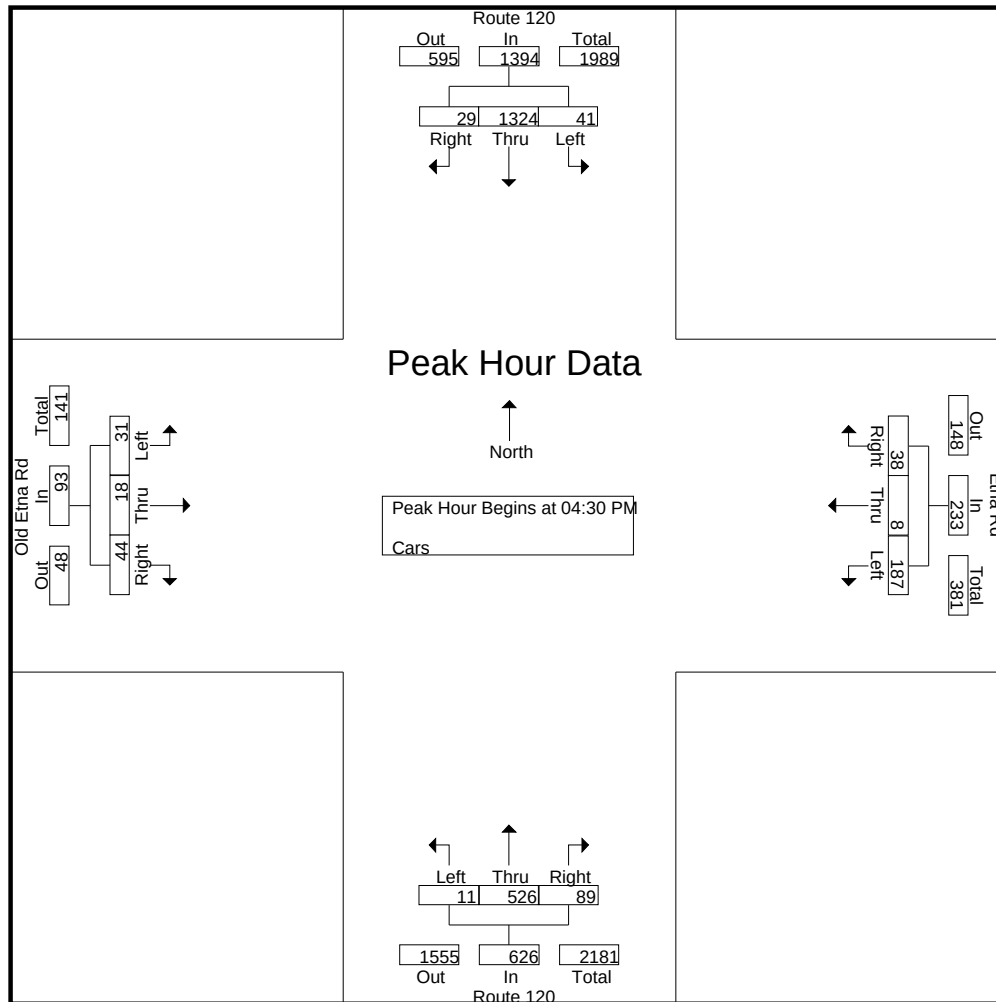
	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	14	323	4	341	58	0	10	68	3	118	21	142	9	2	14	25	576
04:45 PM	5	330	8	343	44	3	8	55	2	134	26	162	6	6	12	24	584
05:00 PM	14	329	10	353	51	4	7	62	4	128	24	156	11	5	12	28	599
05:15 PM	8	342	7	357	34	1	13	48	2	146	18	166	5	5	6	16	587
Total Volume	41	1324	29	1394	187	8	38	233	11	526	89	626	31	18	44	93	2346
% App. Total	2.9	95	2.1		80.3	3.4	16.3		1.8	84	14.2		33.3	19.4	47.3		
PHF	.732	.968	.725	.976	.806	.500	.731	.857	.688	.901	.856	.943	.705	.750	.786	.830	.979

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 5

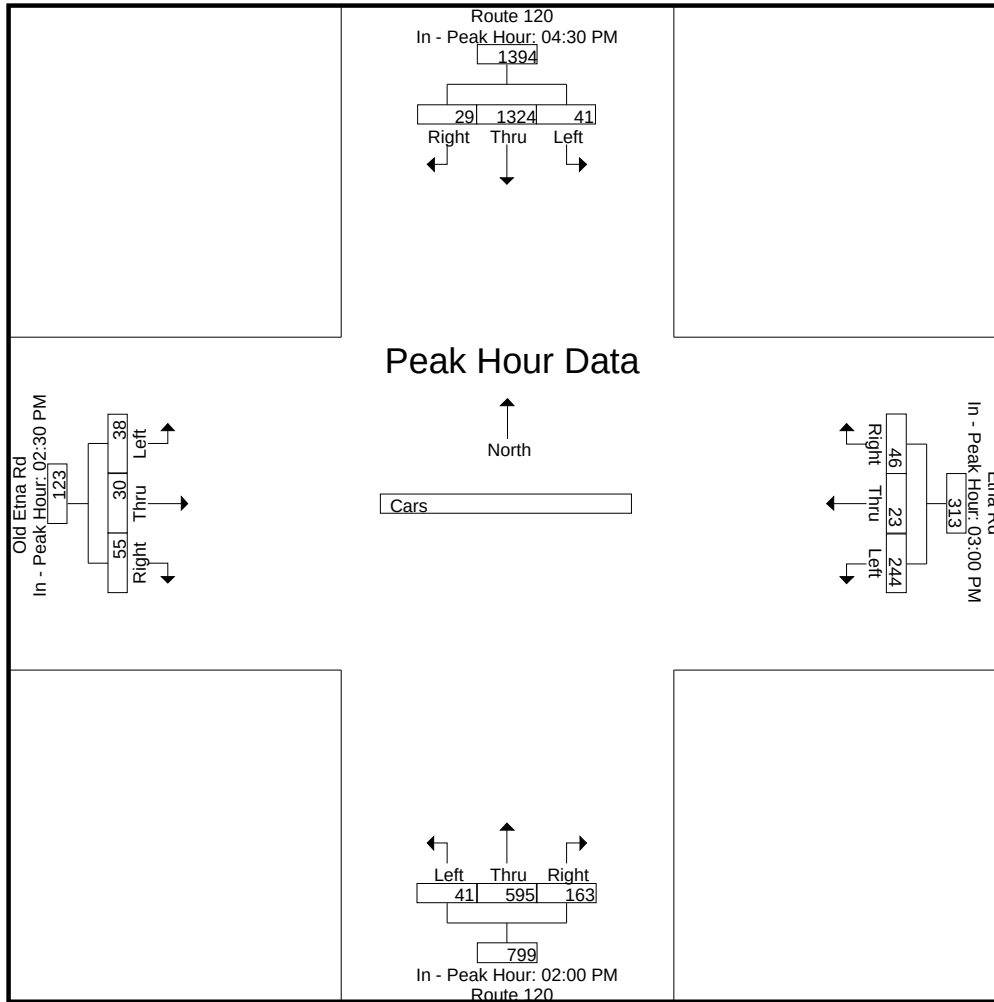


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				03:00 PM				02:00 PM				02:30 PM			
+0 mins.	14	323	4	341	73	4	13	90	3	152	32	187	13	8	11	32
+15 mins.	5	330	8	343	59	8	12	79	10	143	26	179	5	8	15	28
+30 mins.	14	329	10	353	67	4	10	81	12	142	42	196	12	8	19	39
+45 mins.	8	342	7	357	45	7	11	63	16	158	63	237	8	6	10	24
Total Volume	41	1324	29	1394	244	23	46	313	41	595	163	799	38	30	55	123
% App. Total	2.9	95	2.1		78	7.3	14.7		5.1	74.5	20.4		30.9	24.4	44.7	
PHF	.732	.968	.725	.976	.836	.719	.885	.869	.641	.941	.647	.843	.731	.938	.724	.788

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 7

Groups Printed- Trucks

	Route 120 From North			Etna Rd From East			Route 120 From South			Old Etna Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
02:00 PM	4	5	0	0	0	2	0	0	3	0	0	0	14
02:15 PM	0	2	0	0	0	3	0	3	2	0	0	0	10
02:30 PM	0	1	0	2	0	2	0	1	2	0	0	0	8
02:45 PM	0	4	0	3	0	0	0	0	1	1	0	0	9
Total	4	12	0	5	0	7	0	4	8	1	0	0	41
03:00 PM	1	0	0	1	0	0	0	1	1	0	0	0	4
03:15 PM	1	0	0	0	0	1	0	0	3	0	0	0	5
03:30 PM	0	1	0	2	0	1	0	2	2	0	0	0	8
03:45 PM	0	1	1	1	0	0	0	1	1	0	0	0	5
Total	2	2	1	4	0	2	0	4	7	0	0	0	22
04:00 PM	1	0	0	3	0	3	0	1	1	0	0	0	9
04:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	1	0	0	0	0	0	2	0	0	0	0	3
04:45 PM	1	1	0	0	0	0	0	1	1	0	0	0	4
Total	2	3	0	3	0	3	0	4	2	0	0	0	17
05:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
05:15 PM	0	3	0	0	0	0	0	1	1	0	0	0	5
05:30 PM	0	0	0	1	0	0	0	0	1	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	1	1	0	0	0	2
Total	0	3	0	1	0	0	0	3	3	0	0	0	10
Grand Total	8	20	1	13	0	12	0	15	20	1	0	0	90
Apprch %	27.6	69	3.4	52	0	48	0	42.9	57.1	100	0	0	
Total %	8.9	22.2	1.1	14.4	0	13.3	0	16.7	22.2	1.1	0	0	

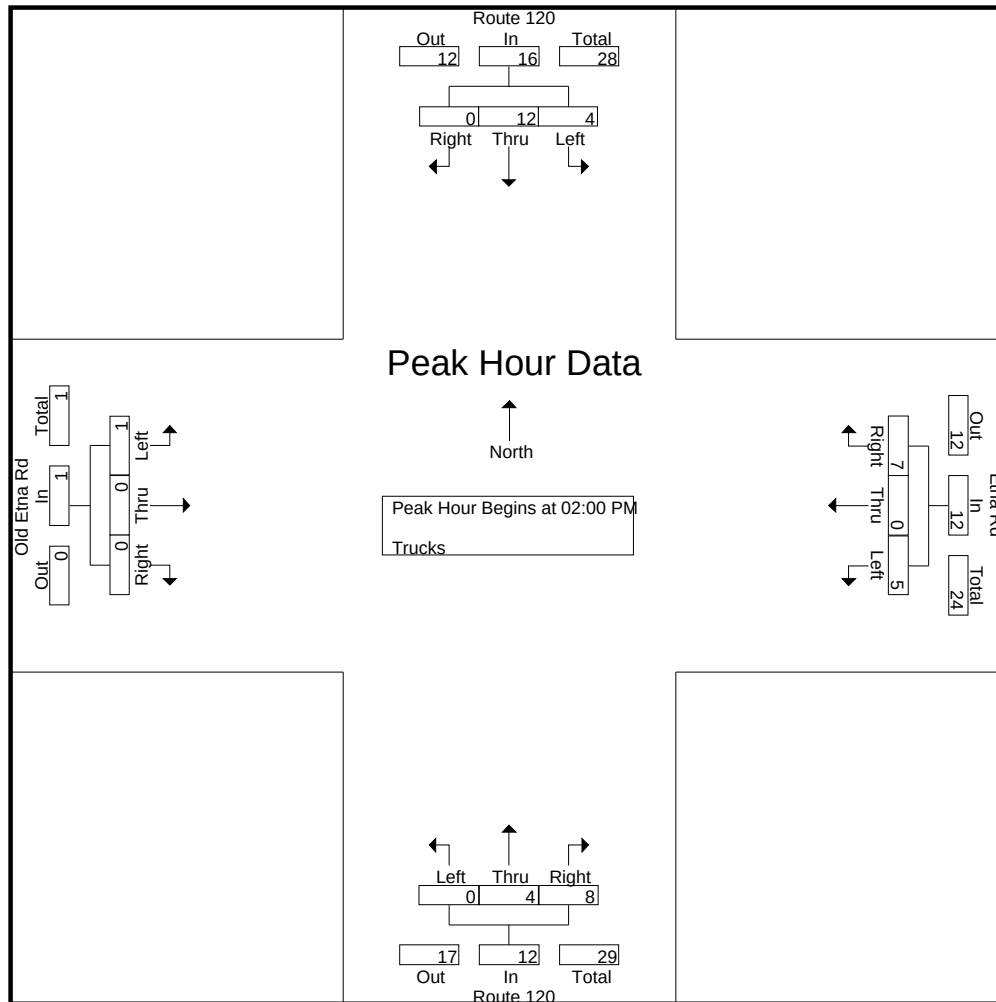
	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	4	5	0	9	0	0	2	2	0	0	3	3	0	0	0	0	14
02:15 PM	0	2	0	2	0	0	3	3	0	3	2	5	0	0	0	0	10
02:30 PM	0	1	0	1	2	0	2	4	0	1	2	3	0	0	0	0	8
02:45 PM	0	4	0	4	3	0	0	3	0	0	1	1	1	0	0	1	9
Total Volume	4	12	0	16	5	0	7	12	0	4	8	12	1	0	0	1	41
% App. Total	25	75	0		41.7	0	58.3		0	33.3	66.7		100	0	0		
PHF	.250	.600	.000	.444	.417	.000	.583	.750	.000	.333	.667	.600	.250	.000	.000	.250	.732

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 8

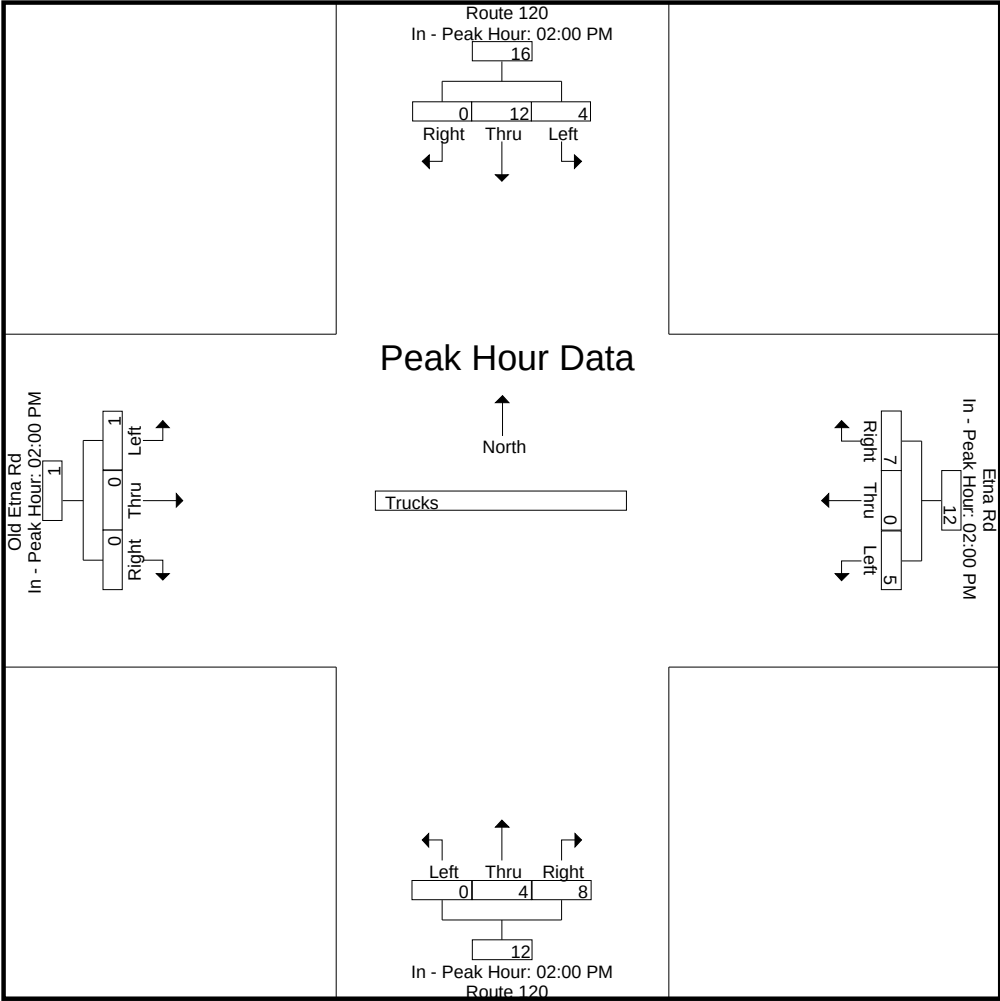


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM				02:00 PM				02:00 PM				02:00 PM			
+0 mins.	4	5	0	9	0	0	2	2	0	0	3	3	0	0	0	0
+15 mins.	0	2	0	2	0	0	3	3	0	3	2	5	0	0	0	0
+30 mins.	0	1	0	1	2	0	2	4	0	1	2	3	0	0	0	0
+45 mins.	0	4	0	4	3	0	0	3	0	0	1	1	1	0	0	1
Total Volume	4	12	0	16	5	0	7	12	0	4	8	12	1	0	0	1
% App. Total	25	75	0		41.7	0	58.3		0	33.3	66.7		100	0	0	
PHF	.250	.600	.000	.444	.417	.000	.583	.750	.000	.333	.667	.600	.250	.000	.000	.250

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 10

Groups Printed- Bikes Peds

	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
02:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
02:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5	5
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	2
Total	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	2
04:00 PM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3	3
04:15 PM	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	3	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	1	1	2	0	0	1	1	0	0	1	0	0	0	1	6	7
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	2	1	7	0	0	1	1	1	0	1	0	0	0	2	12	14
Apprch %	0	0	0		12.5	87.5	0		33.3	33.3	33.3		100	0	0				
Total %	0	0	0		8.3	58.3	0		8.3	8.3	8.3		8.3	0	0		14.3	85.7	

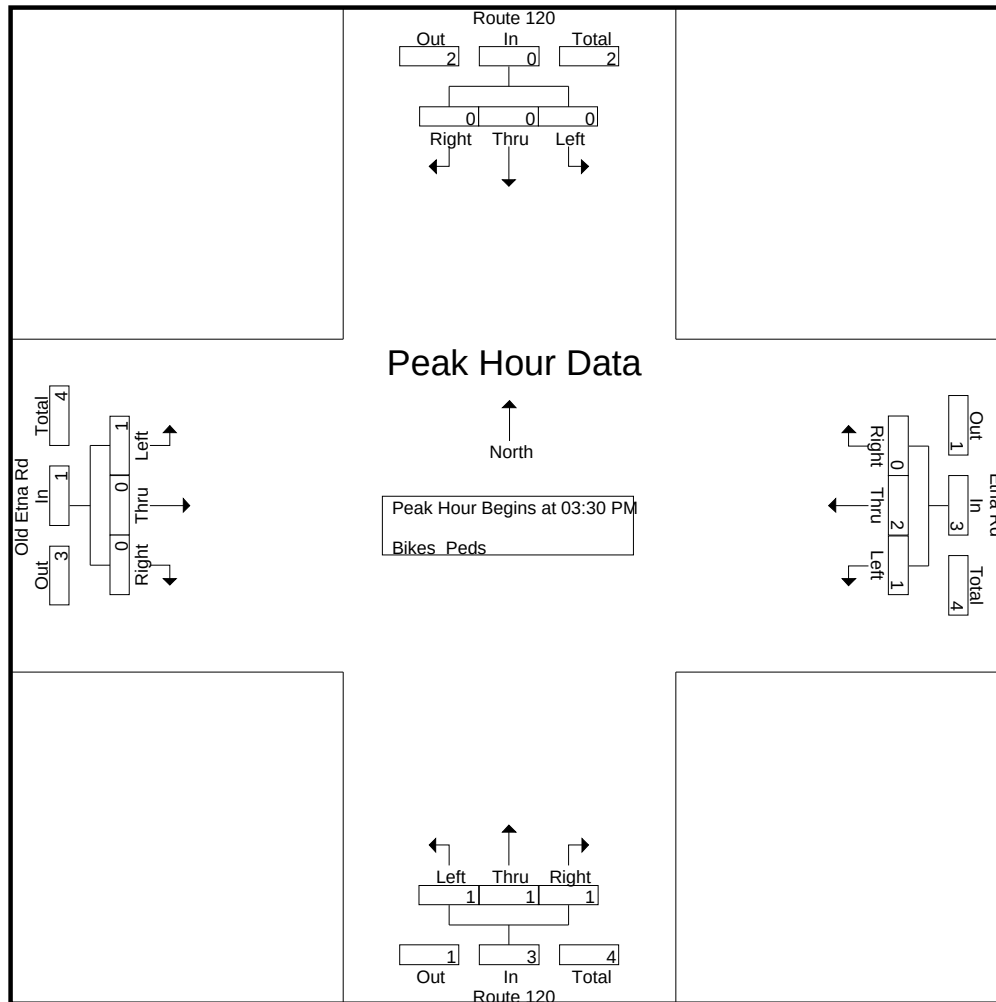
	Route 120 From North				Etna Rd From East				Route 120 From South				Old Etna Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
04:00 PM	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	1	3
Total Volume	0	0	0	0	1	2	0	3	1	1	1	3	1	0	0	1	7
% App. Total	0	0	0	0	33.3	66.7	0		33.3	33.3	33.3		100	0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.250	.250	.250	.250	.375	.250	.000	.000	.250	.583

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 11

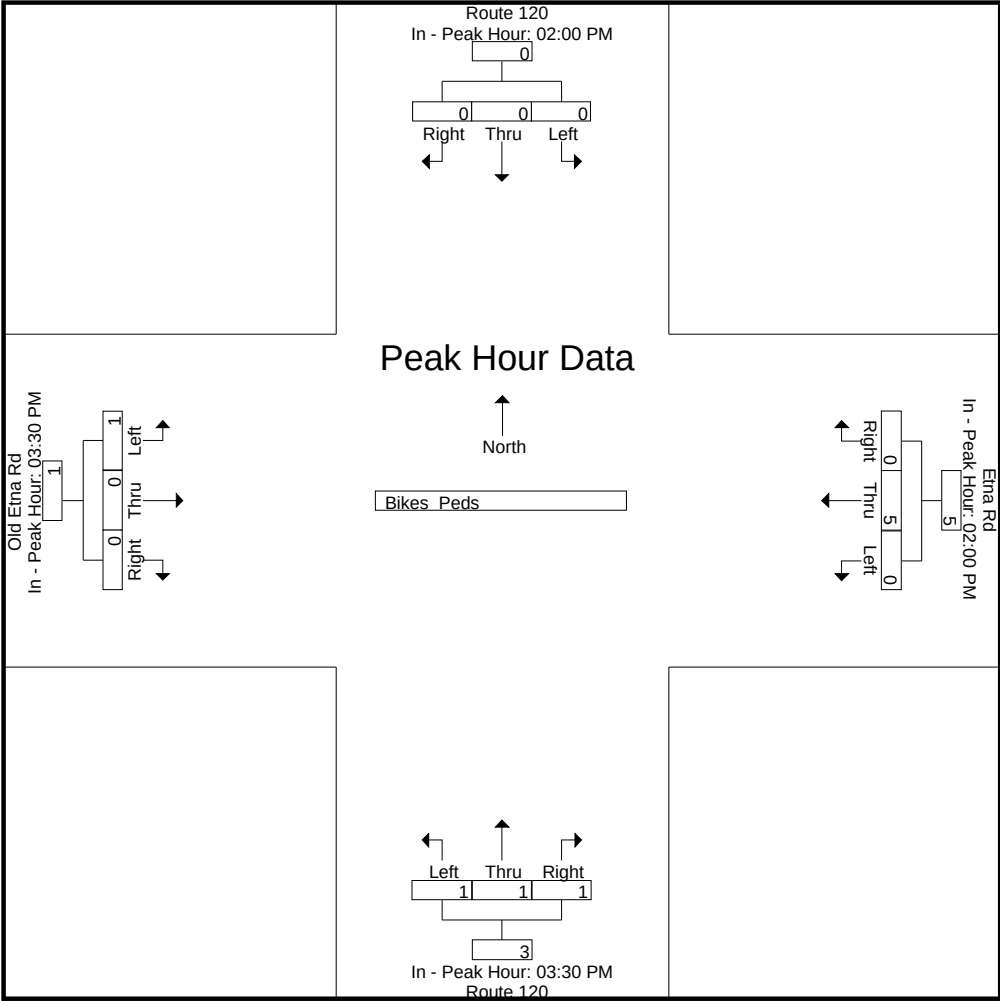


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM				02:00 PM				03:30 PM				03:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	1	0	1	1	1	0	2	1	0	0	1
Total Volume	0	0	0	0	0	5	0	5	1	1	1	3	1	0	0	1
% App. Total	0	0	0	0	0	100	0		33.3	33.3	33.3		100	0	0	
PHF	.000	.000	.000	.000	.000	.625	.000	.625	.250	.250	.250	.375	.250	.000	.000	.250

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 52933005
Site Code : 52933005
Start Date : 11/10/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 1

Groups Printed- Cars - Trucks

	Route 120 From North			Etna Road From East			Route 120 From South			Old Etna Road From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	5	91	0	24	2	4	4	86	15	3	0	14	248
11:15 AM	1	73	1	23	0	4	2	112	21	1	0	4	242
11:30 AM	4	98	3	15	4	4	8	106	22	3	1	8	276
11:45 AM	3	102	2	16	0	4	4	92	27	3	0	1	254
Total	13	364	6	78	6	16	18	396	85	10	1	27	1020
12:00 PM	5	103	0	21	0	2	3	110	14	3	1	5	267
12:15 PM	8	96	1	16	2	4	0	101	19	2	2	4	255
12:30 PM	5	99	4	18	1	9	2	118	19	1	1	2	279
12:45 PM	8	102	3	20	0	5	2	95	15	5	0	1	256
Total	26	400	8	75	3	20	7	424	67	11	4	12	1057
Grand Total	39	764	14	153	9	36	25	820	152	21	5	39	2077
Apprch %	4.8	93.5	1.7	77.3	4.5	18.2	2.5	82.2	15.2	32.3	7.7	60	
Total %	1.9	36.8	0.7	7.4	0.4	1.7	1.2	39.5	7.3	1	0.2	1.9	
Cars	37	761	14	153	9	30	25	818	152	21	5	39	2064
% Cars	94.9	99.6	100	100	100	83.3	100	99.8	100	100	100	100	99.4
Trucks	2	3	0	0	0	6	0	2	0	0	0	0	13
% Trucks	5.1	0.4	0	0	0	16.7	0	0.2	0	0	0	0	0.6

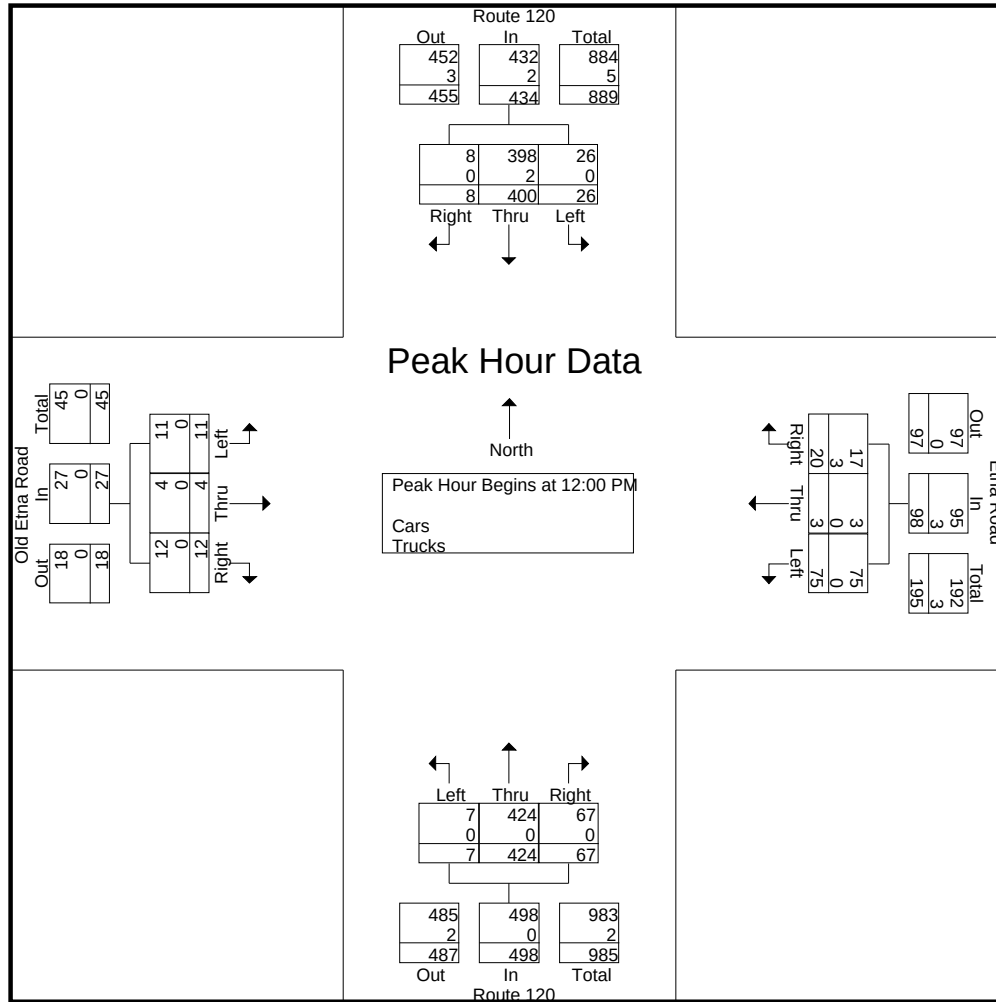
	Route 120 From North				Etna Road From East				Route 120 From South				Old Etna Road From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	5	103	0	108	21	0	2	23	3	110	14	127	3	1	5	9	267
12:15 PM	8	96	1	105	16	2	4	22	0	101	19	120	2	2	4	8	255
12:30 PM	5	99	4	108	18	1	9	28	2	118	19	139	1	1	2	4	279
12:45 PM	8	102	3	113	20	0	5	25	2	95	15	112	5	0	1	6	256
Total Volume	26	400	8	434	75	3	20	98	7	424	67	498	11	4	12	27	1057
% App. Total	6	92.2	1.8		76.5	3.1	20.4		1.4	85.1	13.5		40.7	14.8	44.4		
PHF	.813	.971	.500	.960	.893	.375	.556	.875	.583	.898	.882	.896	.550	.500	.600	.750	.947
Cars	26	398	8	432	75	3	17	95	7	424	67	498	11	4	12	27	1052
% Cars	100	99.5	100	99.5	100	100	85.0	96.9	100	100	100	100	100	100	100	100	99.5
Trucks	0	2	0	2	0	0	3	3	0	0	0	0	0	0	0	0	5
% Trucks	0	0.5	0	0.5	0	0	15.0	3.1	0	0	0	0	0	0	0	0	0.5

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 2

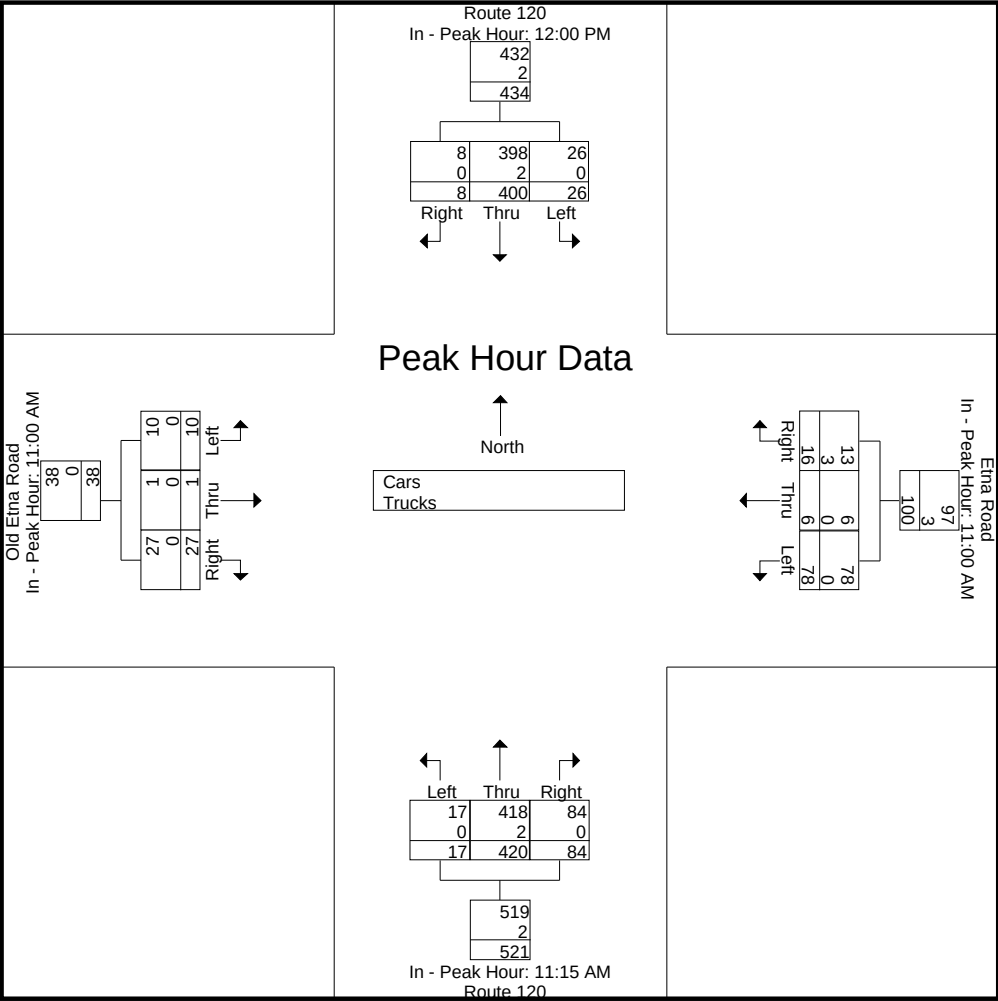


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM				11:00 AM				11:15 AM				11:00 AM			
+0 mins.	5	103	0	108	24	2	4	30	2	112	21	135	3	0	14	17
+15 mins.	8	96	1	105	23	0	4	27	8	106	22	136	1	0	4	5
+30 mins.	5	99	4	108	15	4	4	23	4	92	27	123	3	1	8	12
+45 mins.	8	102	3	113	16	0	4	20	3	110	14	127	3	0	1	4
Total Volume	26	400	8	434	78	6	16	100	17	420	84	521	10	1	27	38
% App. Total	6	92.2	1.8		78	6	16		3.3	80.6	16.1		26.3	2.6	71.1	
PHF	.813	.971	.500	.960	.813	.375	1.000	.833	.531	.938	.778	.958	.833	.250	.482	.559
Cars	26	398	8	432	78	6	13	97	17	418	84	519	10	1	27	38
% Cars	100	99.5	100	99.5	100	100	81.2	97	100	99.5	100	99.6	100	100	100	100
Trucks	0	2	0	2	0	0	3	3	0	2	0	2	0	0	0	0
% Trucks	0	0.5	0	0.5	0	0	18.8	3	0	0.5	0	0.4	0	0	0	0

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 4

Groups Printed- Cars

	Route 120 From North			Etna Road From East			Route 120 From South			Old Etna Road From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	5	91	0	24	2	3	4	86	15	3	0	14	247
11:15 AM	1	73	1	23	0	3	2	112	21	1	0	4	241
11:30 AM	3	98	3	15	4	3	8	104	22	3	1	8	272
11:45 AM	2	101	2	16	0	4	4	92	27	3	0	1	252
Total	11	363	6	78	6	13	18	394	85	10	1	27	1012
12:00 PM	5	103	0	21	0	2	3	110	14	3	1	5	267
12:15 PM	8	96	1	16	2	3	0	101	19	2	2	4	254
12:30 PM	5	98	4	18	1	8	2	118	19	1	1	2	277
12:45 PM	8	101	3	20	0	4	2	95	15	5	0	1	254
Total	26	398	8	75	3	17	7	424	67	11	4	12	1052
Grand Total	37	761	14	153	9	30	25	818	152	21	5	39	2064
Apprch %	4.6	93.7	1.7	79.7	4.7	15.6	2.5	82.2	15.3	32.3	7.7	60	
Total %	1.8	36.9	0.7	7.4	0.4	1.5	1.2	39.6	7.4	1	0.2	1.9	

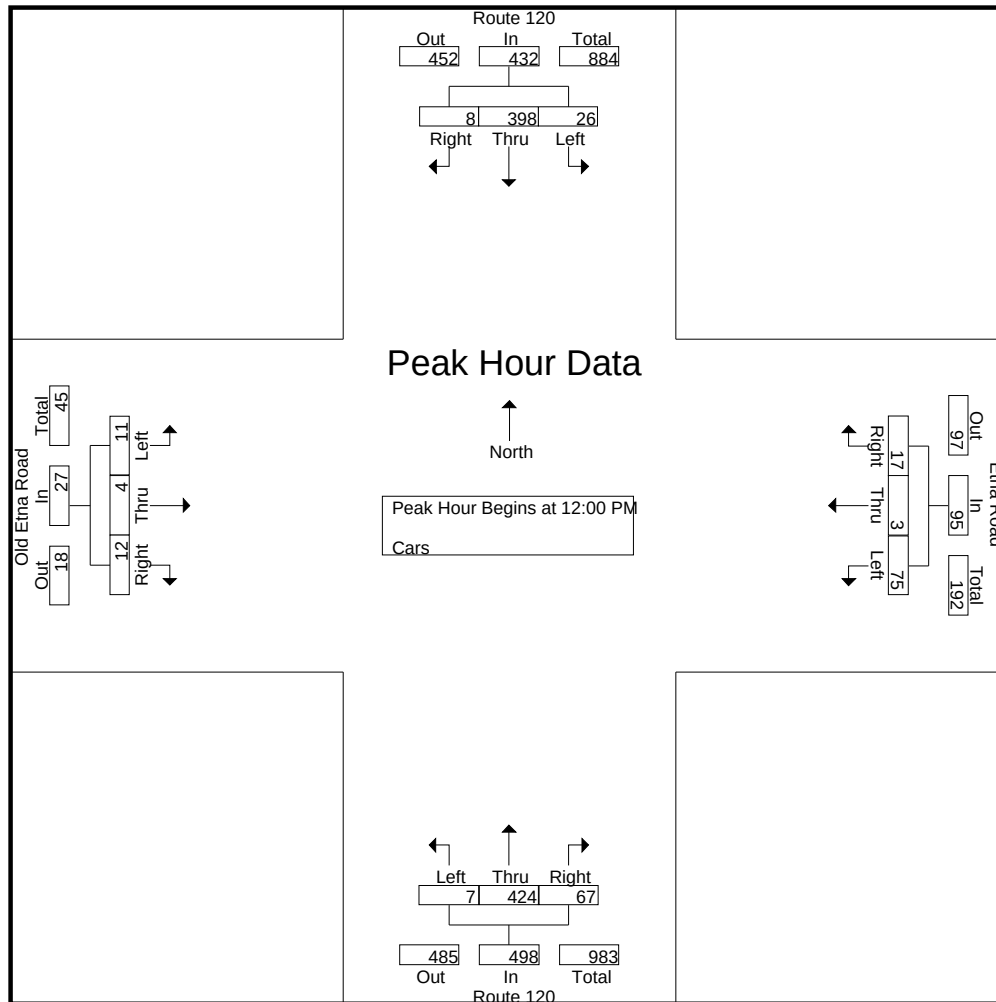
	Route 120 From North				Etna Road From East				Route 120 From South				Old Etna Road From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	5	103	0	108	21	0	2	23	3	110	14	127	3	1	5	9	267
12:15 PM	8	96	1	105	16	2	3	21	0	101	19	120	2	2	4	8	254
12:30 PM	5	98	4	107	18	1	8	27	2	118	19	139	1	1	2	4	277
12:45 PM	8	101	3	112	20	0	4	24	2	95	15	112	5	0	1	6	254
Total Volume	26	398	8	432	75	3	17	95	7	424	67	498	11	4	12	27	1052
% App. Total	6	92.1	1.9		78.9	3.2	17.9		1.4	85.1	13.5		40.7	14.8	44.4		
PHF	.813	.966	.500	.964	.893	.375	.531	.880	.583	.898	.882	.896	.550	.500	.600	.750	.949

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 5

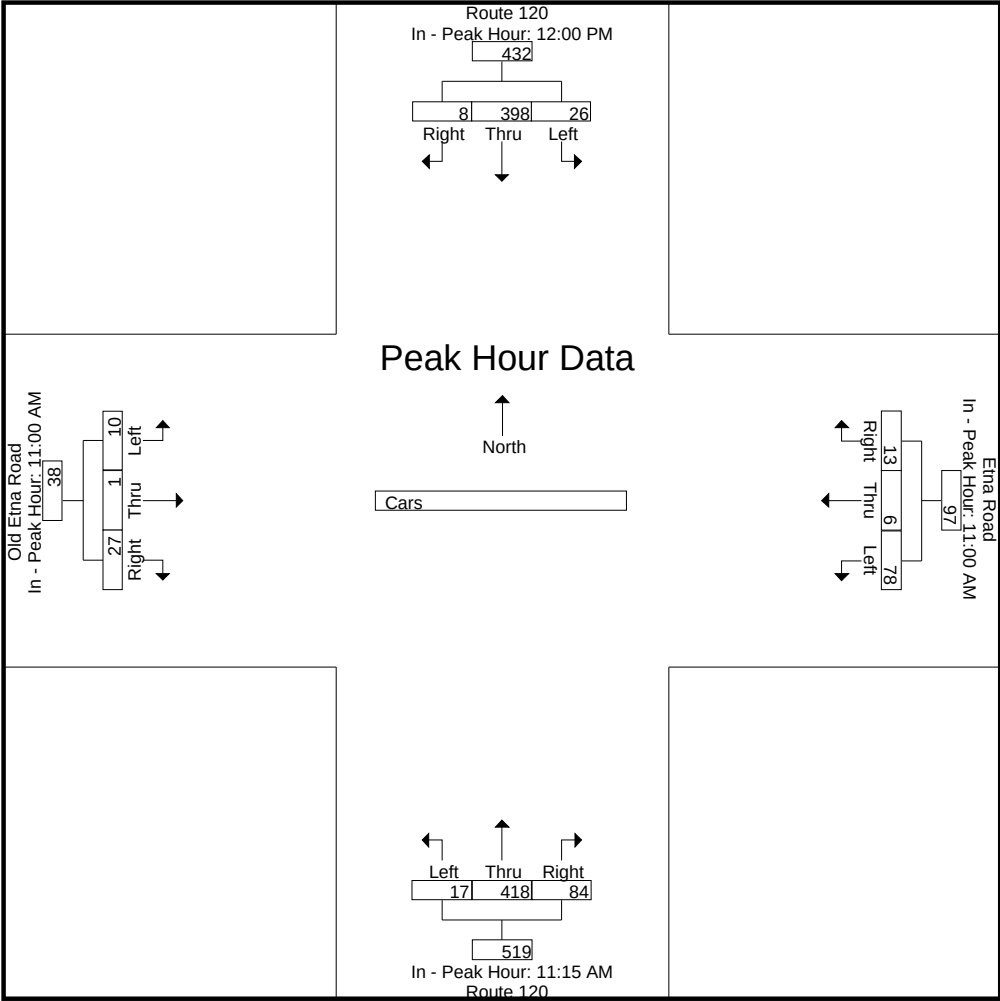


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM				11:00 AM				11:15 AM				11:00 AM			
+0 mins.	5	103	0	108	24	2	3	29	2	112	21	135	3	0	14	17
+15 mins.	8	96	1	105	23	0	3	26	8	104	22	134	1	0	4	5
+30 mins.	5	98	4	107	15	4	3	22	4	92	27	123	3	1	8	12
+45 mins.	8	101	3	112	16	0	4	20	3	110	14	127	3	0	1	4
Total Volume	26	398	8	432	78	6	13	97	17	418	84	519	10	1	27	38
% App. Total	6	92.1	1.9		80.4	6.2	13.4		3.3	80.5	16.2		26.3	2.6	71.1	
PHF	.813	.966	.500	.964	.813	.375	.813	.836	.531	.933	.778	.961	.833	.250	.482	.559

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 7

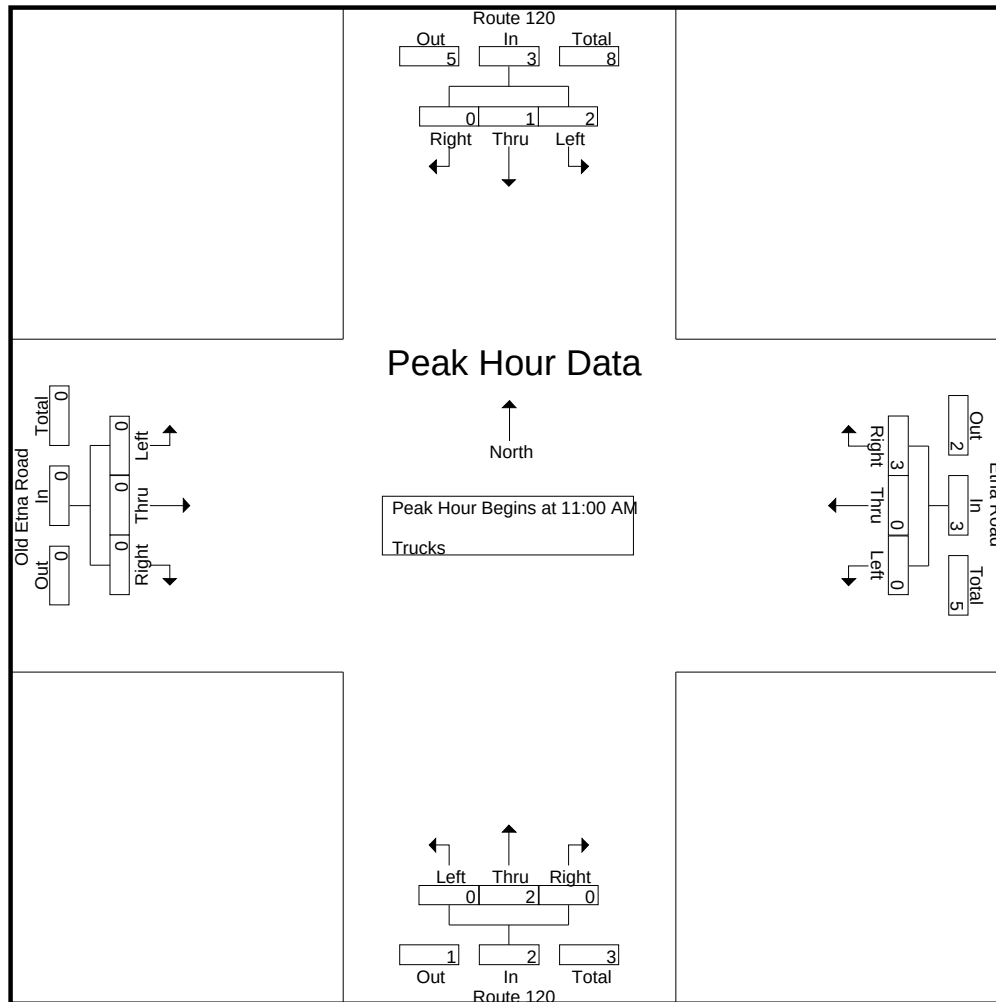
Groups Printed- Trucks

	Route 120 From North			Etna Road From East			Route 120 From South			Old Etna Road From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
11:30 AM	1	0	0	0	0	1	0	2	0	0	0	0	4
11:45 AM	1	1	0	0	0	0	0	0	0	0	0	0	2
Total	2	1	0	0	0	3	0	2	0	0	0	0	8
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
12:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	2
12:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	2
Total	0	2	0	0	0	3	0	0	0	0	0	0	5
Grand Total	2	3	0	0	0	6	0	2	0	0	0	0	13
Apprch %	40	60	0	0	0	100	0	100	0	0	0	0	
Total %	15.4	23.1	0	0	0	46.2	0	15.4	0	0	0	0	

	Route 120 From North				Etna Road From East				Route 120 From South				Old Etna Road From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
11:30 AM	1	0	0	1	0	0	1	1	0	2	0	2	0	0	0	0	4
11:45 AM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	2	1	0	3	0	0	3	3	0	2	0	2	0	0	0	0	8
% App. Total	66.7	33.3	0		0	0	100		0	100	0		0	0	0		
PHF	.500	.250	.000	.375	.000	.000	.750	.750	.000	.250	.000	.250	.000	.000	.000	.000	.500

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 8

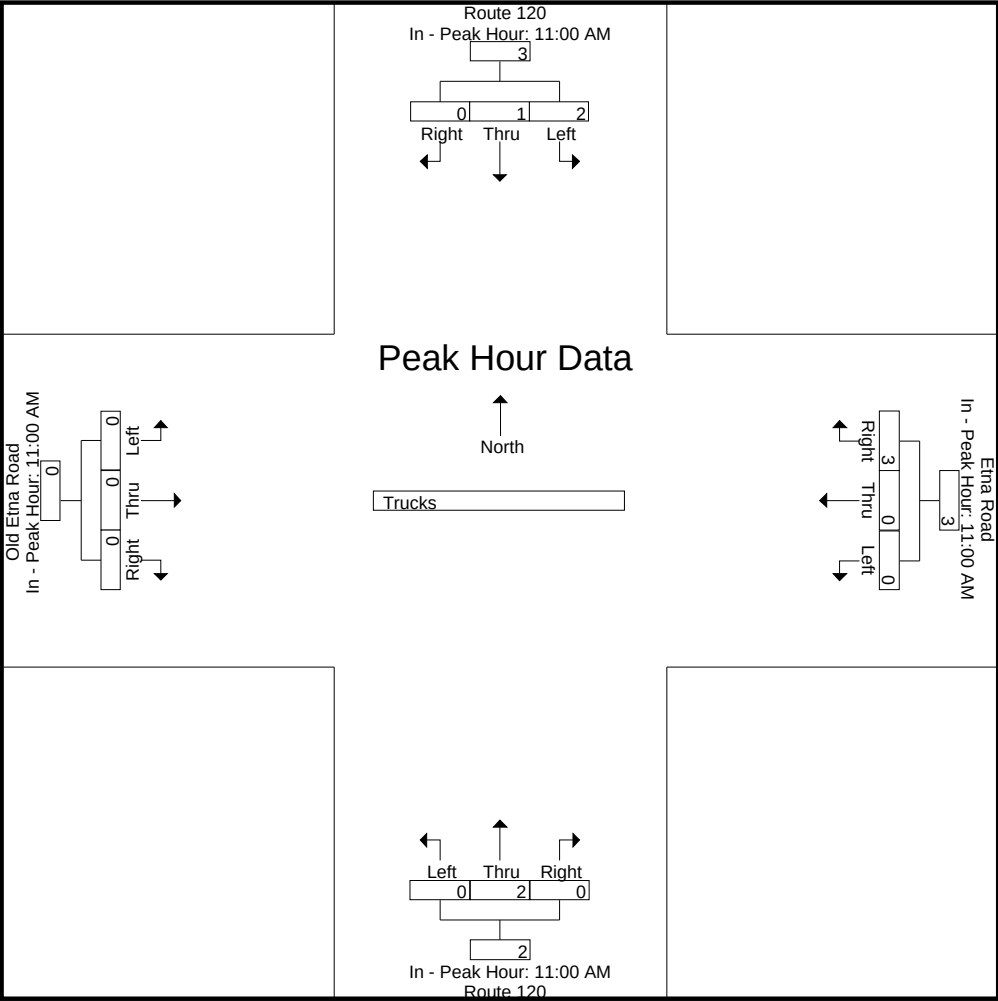


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:00 AM				11:00 AM				11:00 AM				11:00 AM			
+0 mins.	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
+30 mins.	1	0	0	1	0	0	1	1	0	2	0	2	0	0	0	0
+45 mins.	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	2	1	0	3	0	0	3	3	0	2	0	2	0	0	0	0
% App. Total	66.7	33.3	0		0	0	100		0	100	0		0	0	0	
PHF	.500	.250	.000	.375	.000	.000	.750	.750	.000	.250	.000	.250	.000	.000	.000	.000

N/S Street : Route 120
 E/W Street : Etna Road/Old Etna Road
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S5
 Site Code : 52933005
 Start Date : 11/12/2022
 Page No : 9



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 10

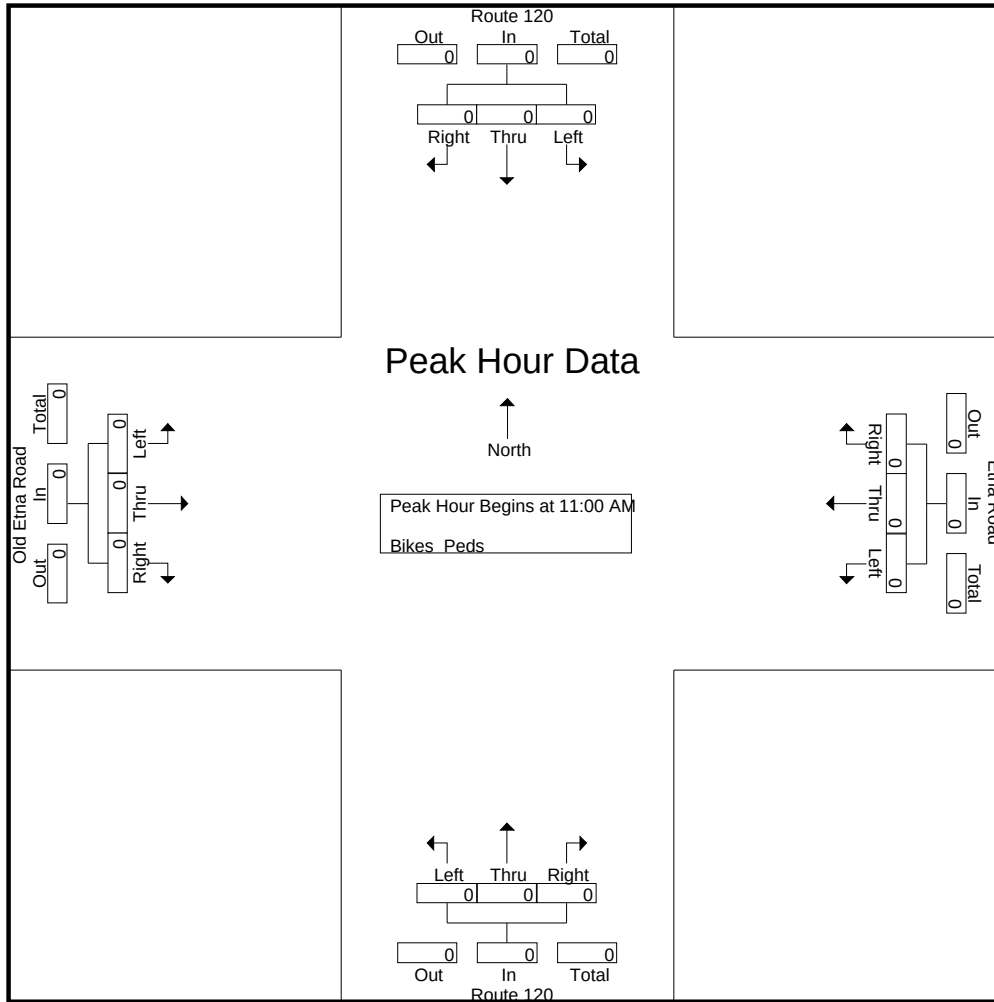
Groups Printed- Bikes Peds

	Route 120 From North				Etna Road From East				Route 120 From South				Old Etna Road From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
11:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2	0	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2	0	2
Grand Total	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	3	0	3
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

	Route 120 From North				Etna Road From East				Route 120 From South				Old Etna Road From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 11

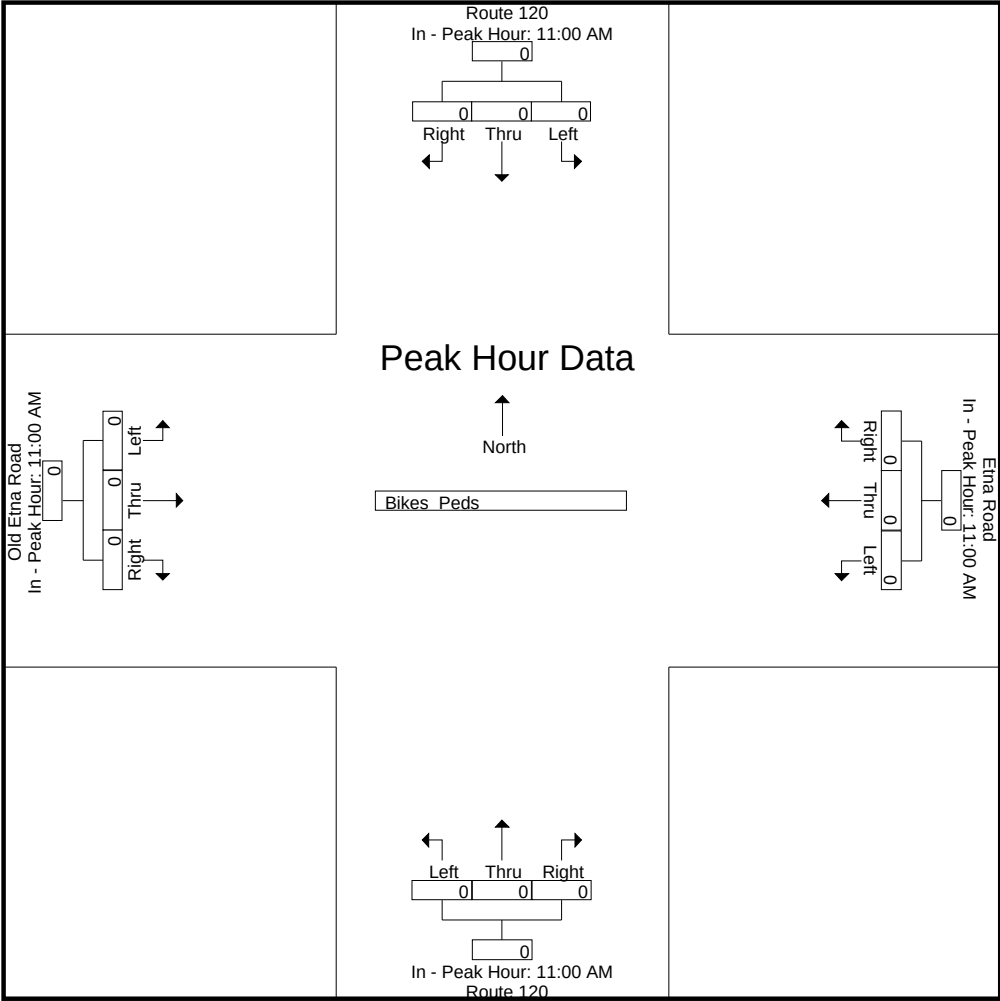


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:00 AM				11:00 AM				11:00 AM				11:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Route 120
E/W Street : Etna Road/Old Etna Road
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S5
Site Code : 52933005
Start Date : 11/12/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

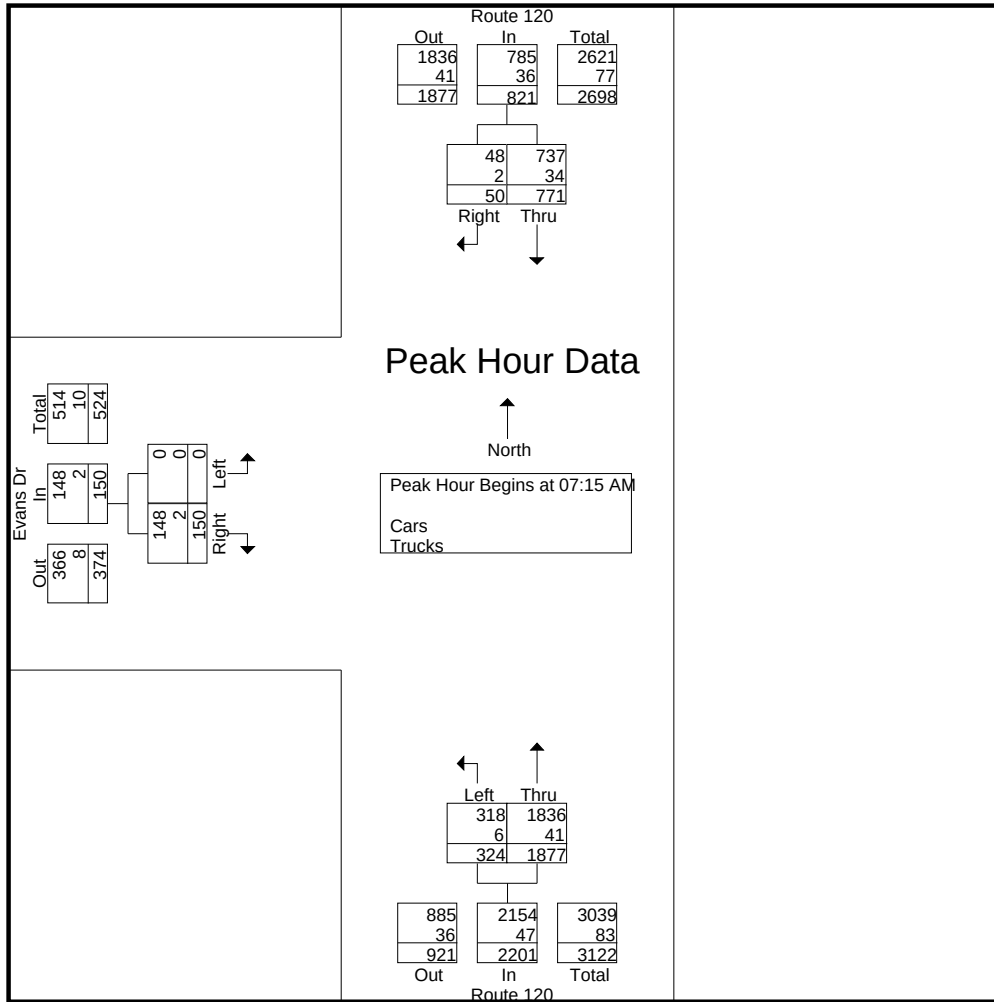
	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right		Left	Thru		Left	Right		Int. Total
07:00 AM	175	9		102	361		1	20		668
07:15 AM	176	19		161	399		0	52		807
07:30 AM	202	18		65	493		0	36		814
07:45 AM	207	11		64	553		0	35		870
Total	760	57		392	1806		1	143		3159
08:00 AM	186	2		34	432		0	27		681
08:15 AM	134	3		22	388		0	21		568
08:30 AM	161	2		9	374		0	9		555
08:45 AM	164	0		17	277		1	11		470
Total	645	7		82	1471		1	68		2274
Grand Total	1405	64		474	3277		2	211		5433
Apprch %	95.6	4.4		12.6	87.4		0.9	99.1		
Total %	25.9	1.2		8.7	60.3		0	3.9		
Cars	1334	62		463	3196		2	205		5262
% Cars	94.9	96.9		97.7	97.5		100	97.2		96.9
Trucks	71	2		11	81		0	6		171
% Trucks	5.1	3.1		2.3	2.5		0	2.8		3.1

	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	176	19	195	161	399	560	0	52	52	807
07:30 AM	202	18	220	65	493	558	0	36	36	814
07:45 AM	207	11	218	64	553	617	0	35	35	870
08:00 AM	186	2	188	34	432	466	0	27	27	681
Total Volume	771	50	821	324	1877	2201	0	150	150	3172
% App. Total	93.9	6.1		14.7	85.3		0	100		
PHF	.931	.658	.933	.503	.849	.892	.000	.721	.721	.911
Cars	737	48	785	318	1836	2154	0	148	148	3087
% Cars	95.6	96.0	95.6	98.1	97.8	97.9	0	98.7	98.7	97.3
Trucks	34	2	36	6	41	47	0	2	2	85
% Trucks	4.4	4.0	4.4	1.9	2.2	2.1	0	1.3	1.3	2.7

Accurate Counts
978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

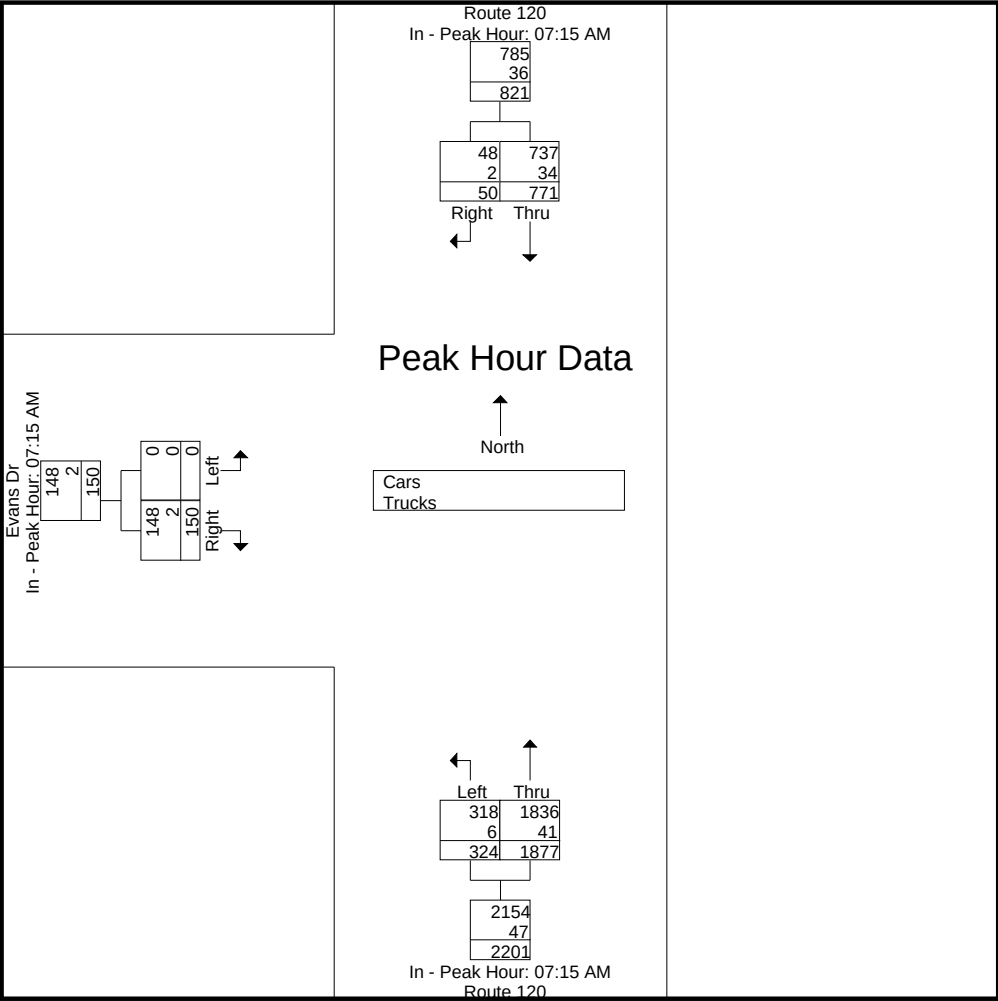
	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	176	19	195	161	399	560	0	52	52
+15 mins.	202	18	220	65	493	558	0	36	36
+30 mins.	207	11	218	64	553	617	0	35	35
+45 mins.	186	2	188	34	432	466	0	27	27
Total Volume	771	50	821	324	1877	2201	0	150	150
% App. Total	93.9	6.1		14.7	85.3		0	100	
PHF	.931	.658	.933	.503	.849	.892	.000	.721	.721
Cars	737	48	785	318	1836	2154	0	148	148
% Cars	95.6	96	95.6	98.1	97.8	97.9	0	98.7	98.7
Trucks	34	2	36	6	41	47	0	2	2
% Trucks	4.4	4	4.4	1.9	2.2	2.1	0	1.3	1.3

Accurate Counts

978-664-2565

N/S Street : Route 120
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933006
 Site Code : 52933006
 Start Date : 11/10/2022
 Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 120
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 52933006
 Site Code : 52933006
 Start Date : 11/10/2022
 Page No : 4

Groups Printed- Cars

	Route 120 From North		Route 120 From South		Evans Dr From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	164	9	98	355	1	17	644
07:15 AM	172	19	159	388	0	51	789
07:30 AM	191	17	65	482	0	35	790
07:45 AM	196	10	62	539	0	35	842
Total	723	55	384	1764	1	138	3065
08:00 AM	178	2	32	427	0	27	666
08:15 AM	127	3	22	374	0	21	547
08:30 AM	152	2	8	365	0	8	535
08:45 AM	154	0	17	266	1	11	449
Total	611	7	79	1432	1	67	2197
Grand Total	1334	62	463	3196	2	205	5262
Apprch %	95.6	4.4	12.7	87.3	1	99	
Total %	25.4	1.2	8.8	60.7	0	3.9	

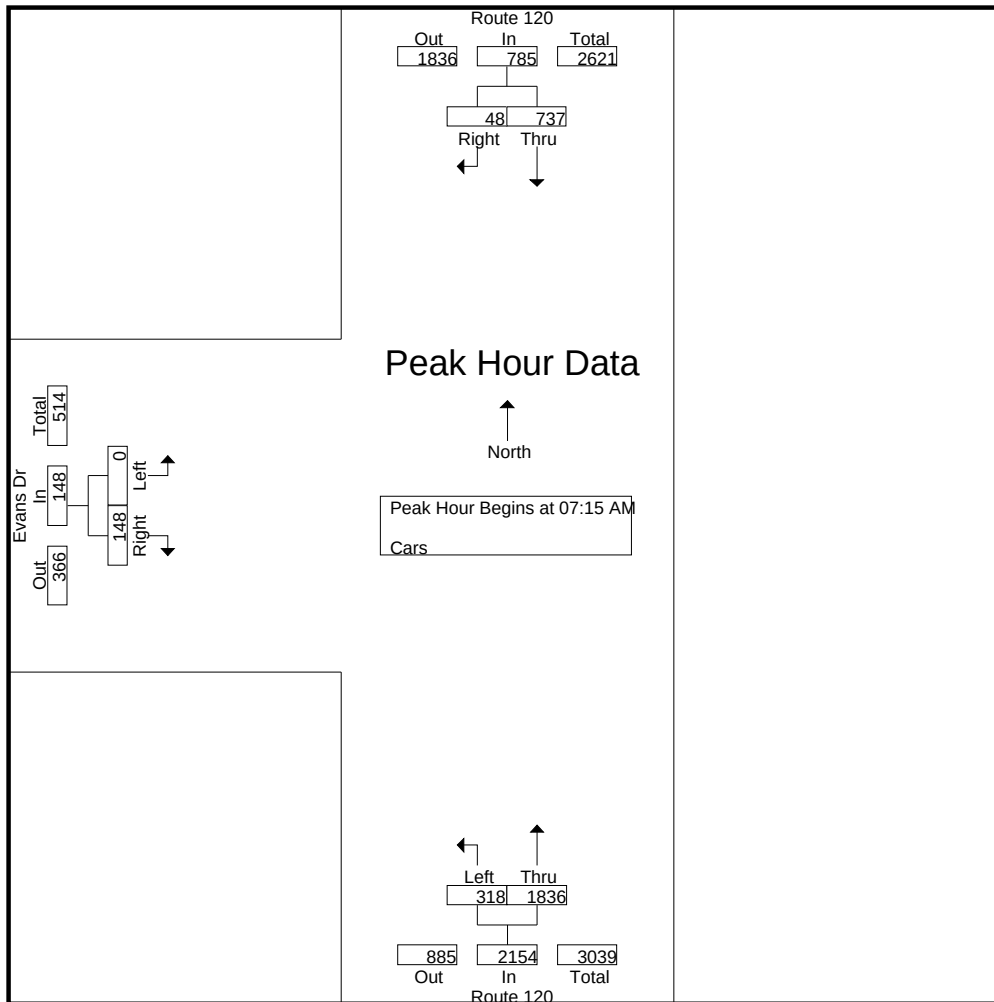
	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	172	19	191	159	388	547	0	51	51	789
07:30 AM	191	17	208	65	482	547	0	35	35	790
07:45 AM	196	10	206	62	539	601	0	35	35	842
08:00 AM	178	2	180	32	427	459	0	27	27	666
Total Volume	737	48	785	318	1836	2154	0	148	148	3087
% App. Total	93.9	6.1		14.8	85.2		0	100		
PHF	.940	.632	.944	.500	.852	.896	.000	.725	.725	.917

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
Page No : 5

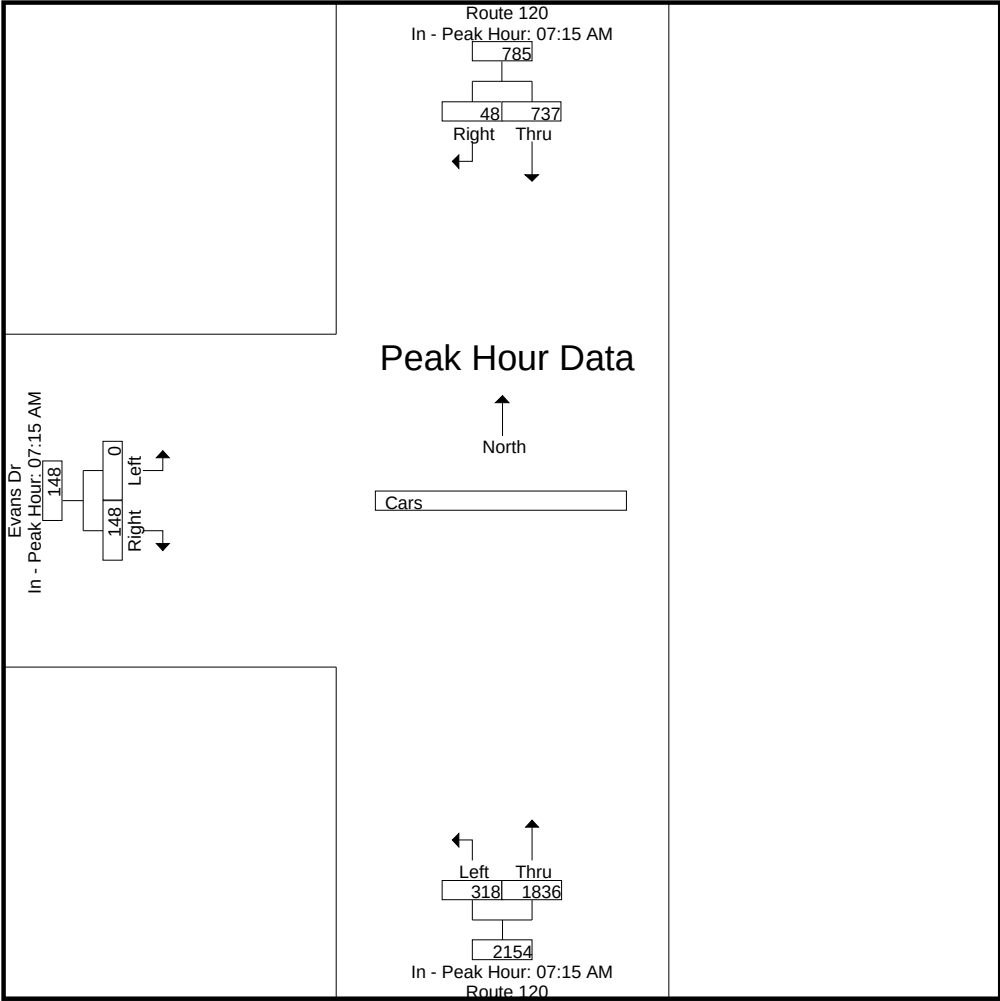


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:15 AM			07:15 AM		
+0 mins.	172	19	191	159	388	547	0	51	51
+15 mins.	191	17	208	65	482	547	0	35	35
+30 mins.	196	10	206	62	539	601	0	35	35
+45 mins.	178	2	180	32	427	459	0	27	27
Total Volume	737	48	785	318	1836	2154	0	148	148
% App. Total	93.9	6.1		14.8	85.2		0	100	
PHF	.940	.632	.944	.500	.852	.896	.000	.725	.725

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
Page No : 7

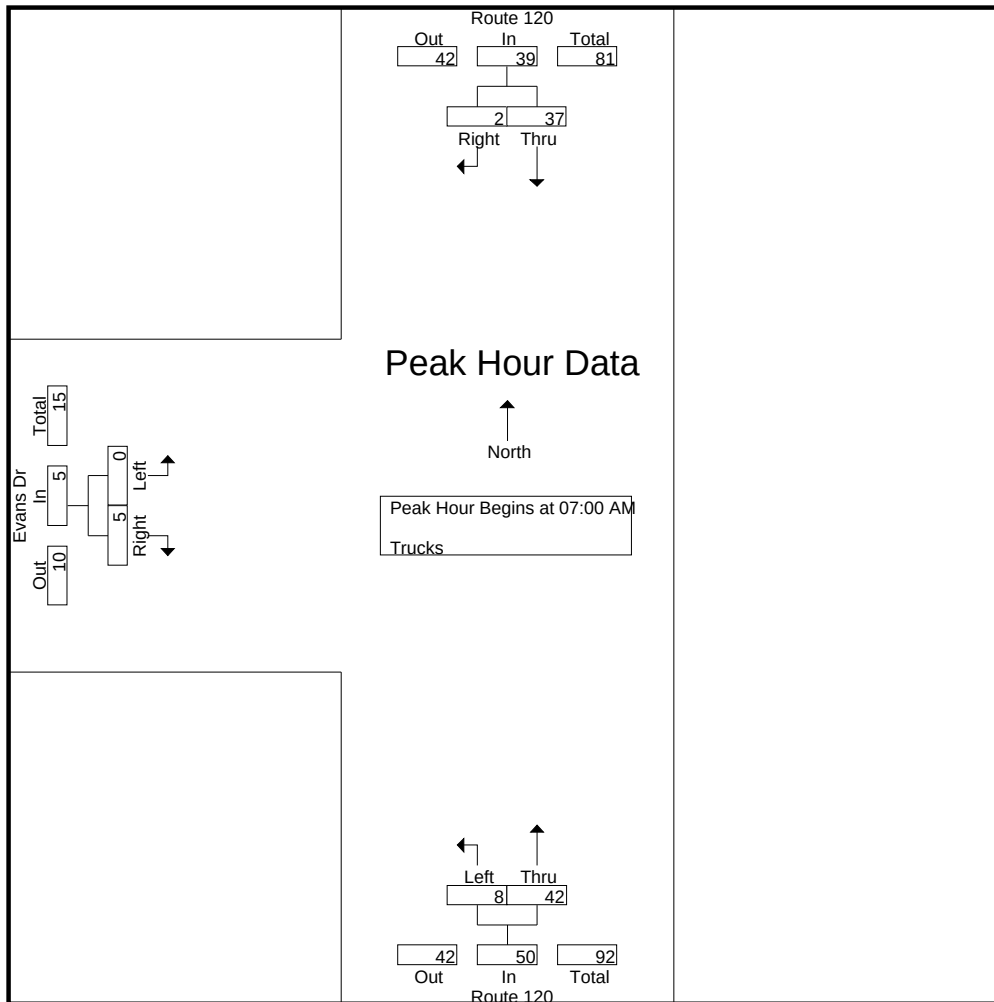
Groups Printed- Trucks

	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right		Left	Thru		Left	Right		Int. Total
07:00 AM	11	0		4	6		0	3		24
07:15 AM	4	0		2	11		0	1		18
07:30 AM	11	1		0	11		0	1		24
07:45 AM	11	1		2	14		0	0		28
Total	37	2		8	42		0	5		94
08:00 AM	8	0		2	5		0	0		15
08:15 AM	7	0		0	14		0	0		21
08:30 AM	9	0		1	9		0	1		20
08:45 AM	10	0		0	11		0	0		21
Total	34	0		3	39		0	1		77
Grand Total	71	2		11	81		0	6		171
Apprch %	97.3	2.7		12	88		0	100		
Total %	41.5	1.2		6.4	47.4		0	3.5		

	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	11	0	11	4	6	10	0	3	3	24
07:15 AM	4	0	4	2	11	13	0	1	1	18
07:30 AM	11	1	12	0	11	11	0	1	1	24
07:45 AM	11	1	12	2	14	16	0	0	0	28
Total Volume	37	2	39	8	42	50	0	5	5	94
% App. Total	94.9	5.1		16	84		0	100		
PHF	.841	.500	.813	.500	.750	.781	.000	.417	.417	.839

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
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Page No : 8

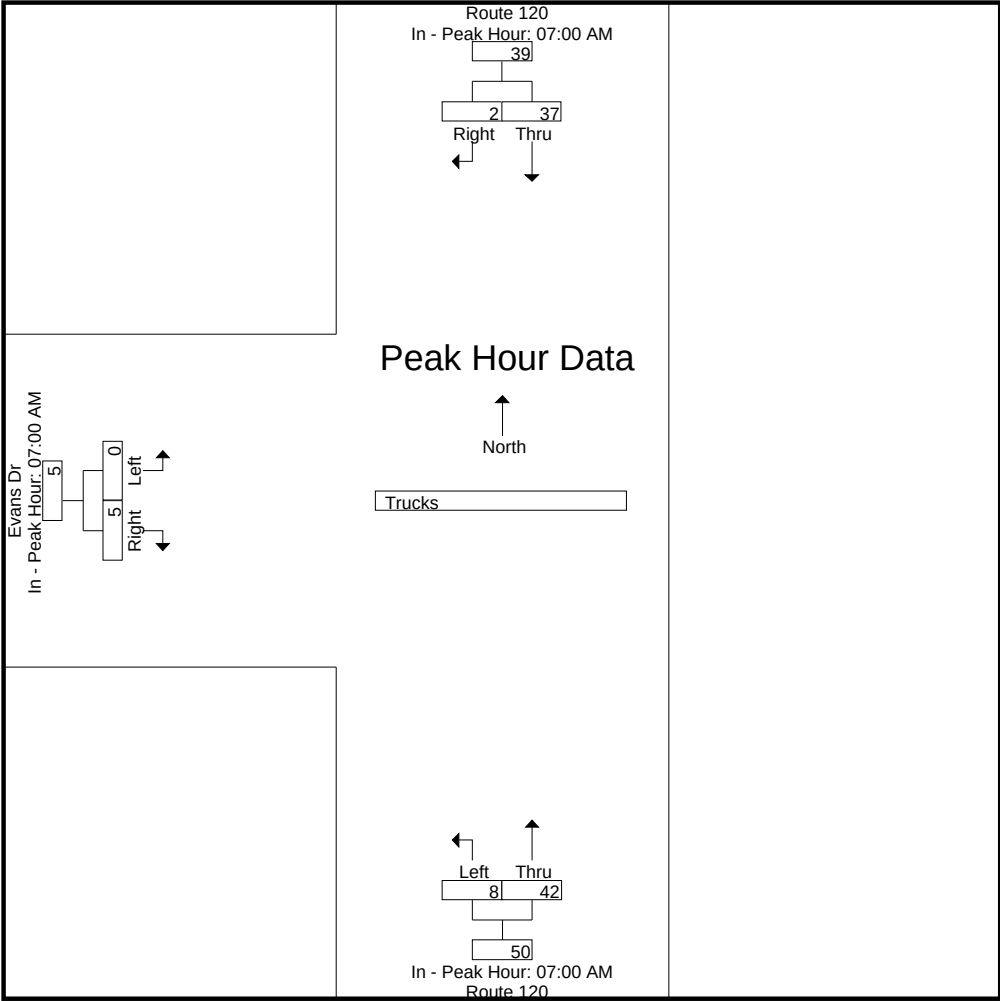


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	11	0	11	4	6	10	0	3	3
+15 mins.	4	0	4	2	11	13	0	1	1
+30 mins.	11	1	12	0	11	11	0	1	1
+45 mins.	11	1	12	2	14	16	0	0	0
Total Volume	37	2	39	8	42	50	0	5	5
% App. Total	94.9	5.1		16	84		0	100	
PHF	.841	.500	.813	.500	.750	.781	.000	.417	.417

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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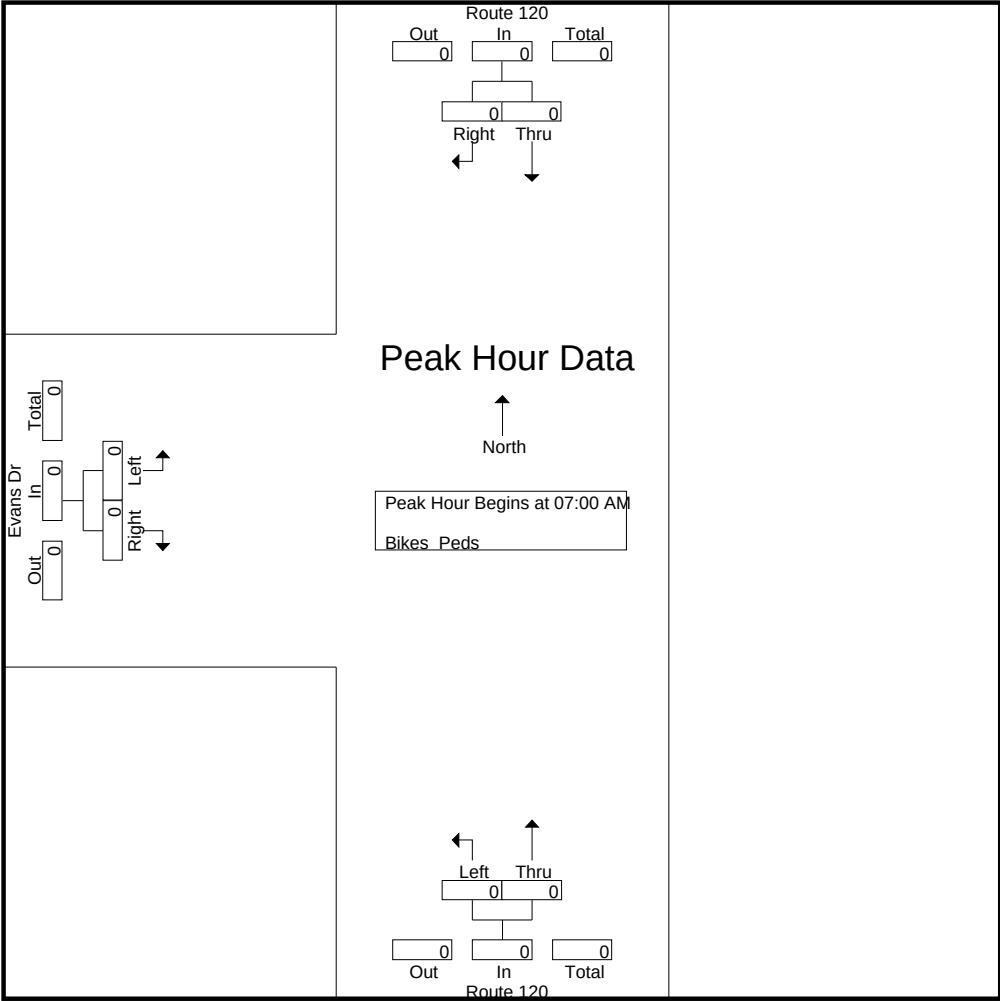
Groups Printed- Bikes Peds

	Route 120 From North			Route 120 From South			Evans Dr From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0				
Total %										0	0	

	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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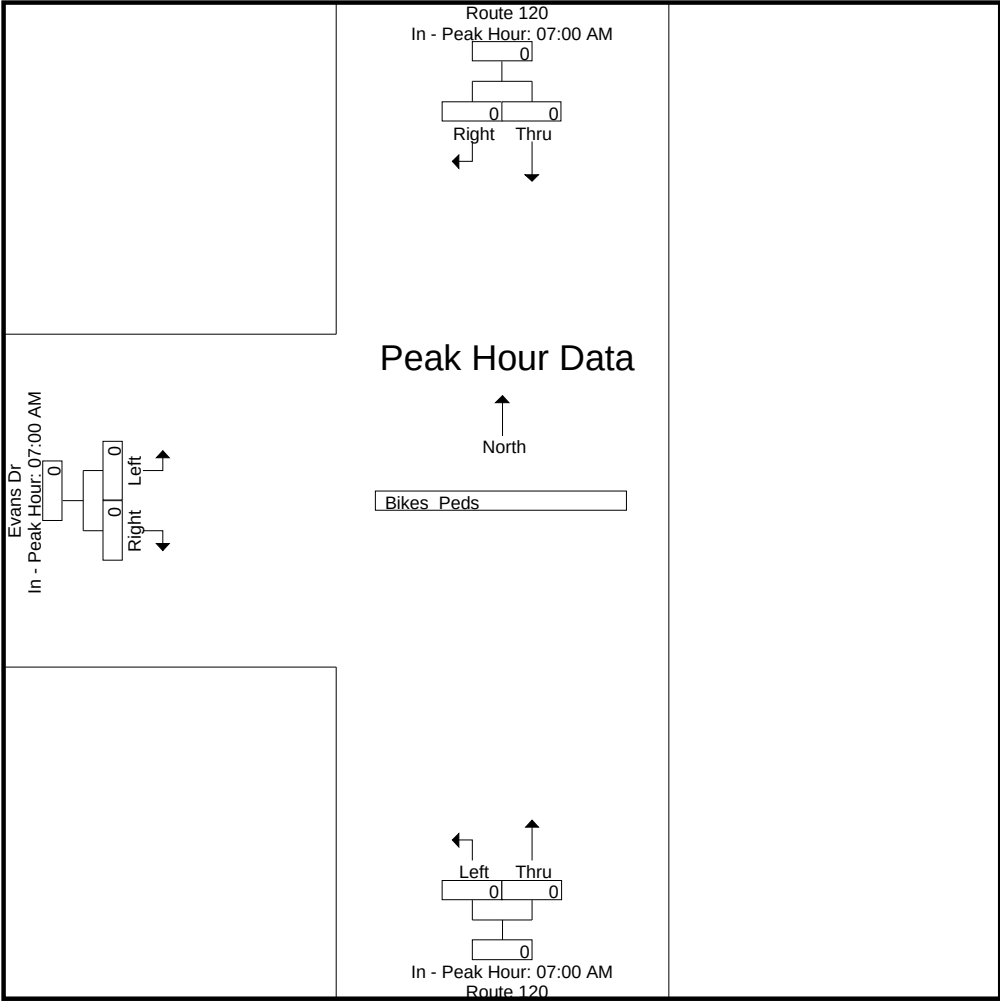


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
Page No : 1

Groups Printed- Cars - Trucks

	Route 120 From North		Route 120 From South		Evans Dr From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
02:00 PM	268	2	31	223	0	56	580
02:15 PM	342	5	28	239	0	32	646
02:30 PM	355	5	33	263	0	30	686
02:45 PM	351	11	30	273	1	36	702
Total	1316	23	122	998	1	154	2614
03:00 PM	404	2	21	210	2	50	689
03:15 PM	385	1	12	181	2	38	619
03:30 PM	473	2	14	190	1	25	705
03:45 PM	452	2	13	212	1	21	701
Total	1714	7	60	793	6	134	2714
04:00 PM	427	2	13	181	0	29	652
04:15 PM	497	2	10	183	0	28	720
04:30 PM	471	0	20	192	2	29	714
04:45 PM	478	8	13	207	1	19	726
Total	1873	12	56	763	3	105	2812
05:00 PM	496	1	18	193	1	32	741
05:15 PM	532	1	13	205	0	29	780
05:30 PM	363	0	6	165	2	15	551
05:45 PM	284	1	10	141	0	11	447
Total	1675	3	47	704	3	87	2519
Grand Total	6578	45	285	3258	13	480	10659
Apprch %	99.3	0.7	8	92	2.6	97.4	
Total %	61.7	0.4	2.7	30.6	0.1	4.5	
Cars	6479	43	268	3181	13	475	10459
% Cars	98.5	95.6	94	97.6	100	99	98.1
Trucks	99	2	17	77	0	5	200
% Trucks	1.5	4.4	6	2.4	0	1	1.9

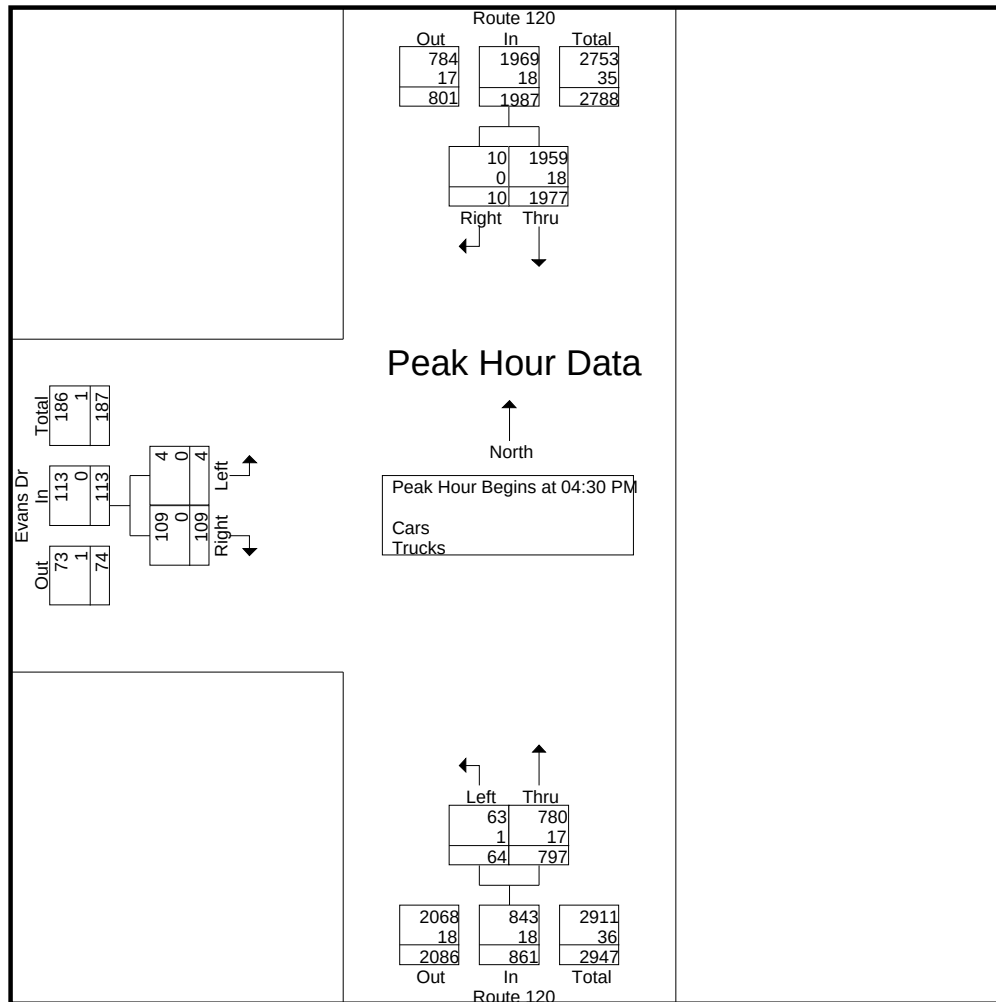
	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	471	0	471	20	192	212	2	29	31	714
04:45 PM	478	8	486	13	207	220	1	19	20	726
05:00 PM	496	1	497	18	193	211	1	32	33	741
05:15 PM	532	1	533	13	205	218	0	29	29	780
Total Volume	1977	10	1987	64	797	861	4	109	113	2961
% App. Total	99.5	0.5		7.4	92.6		3.5	96.5		
PHF	.929	.313	.932	.800	.963	.978	.500	.852	.856	.949
Cars	1959	10	1969	63	780	843	4	109	113	2925
% Cars	99.1	100	99.1	98.4	97.9	97.9	100	100	100	98.8
Trucks	18	0	18	1	17	18	0	0	0	36
% Trucks	0.9	0	0.9	1.6	2.1	2.1	0	0	0	1.2

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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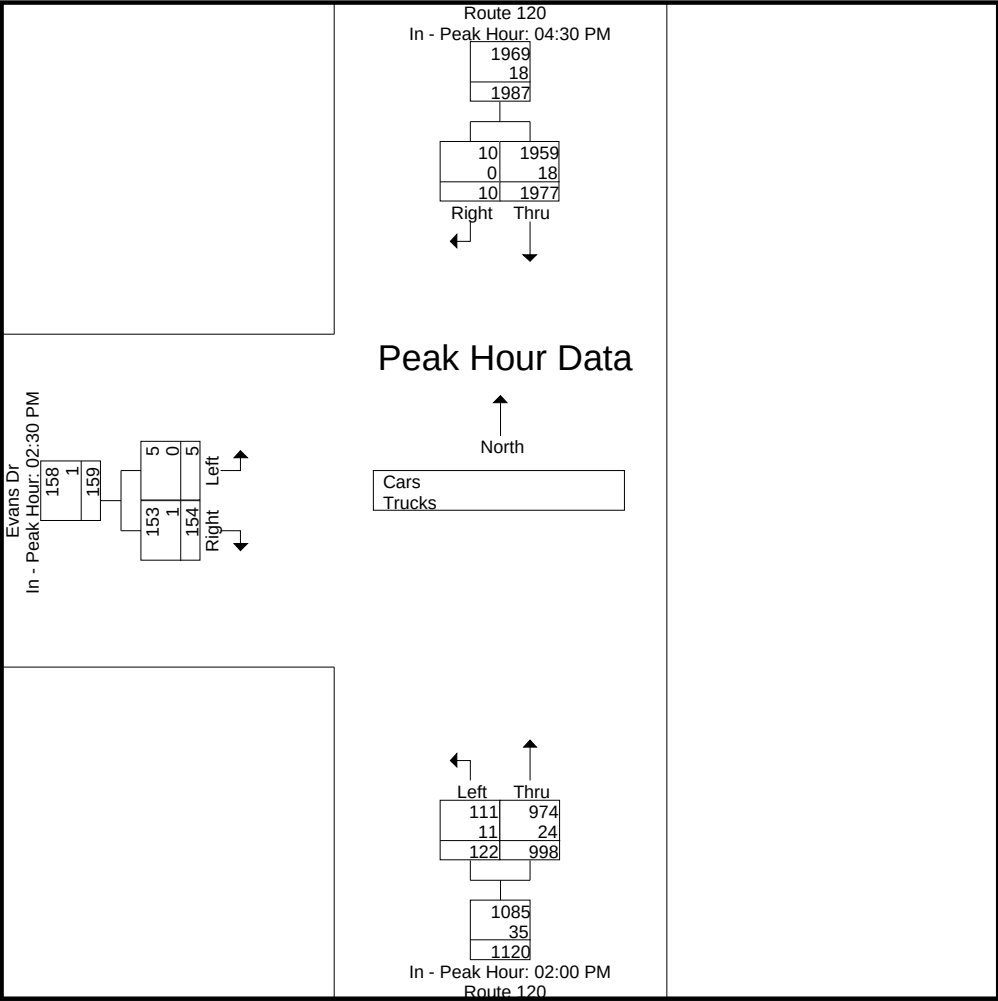
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			02:00 PM			02:30 PM		
+0 mins.	471	0	471	31	223	254	0	30	30
+15 mins.	478	8	486	28	239	267	1	36	37
+30 mins.	496	1	497	33	263	296	2	50	52
+45 mins.	532	1	533	30	273	303	2	38	40
Total Volume	1977	10	1987	122	998	1120	5	154	159
% App. Total	99.5	0.5		10.9	89.1		3.1	96.9	
PHF	.929	.313	.932	.924	.914	.924	.625	.770	.764
Cars	1959	10	1969	111	974	1085	5	153	158
% Cars	99.1	100	99.1	91	97.6	96.9	100	99.4	99.4
Trucks	18	0	18	11	24	35	0	1	1
% Trucks	0.9	0	0.9	9	2.4	3.1	0	0.6	0.6

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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Accurate Counts

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N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
Page No : 4

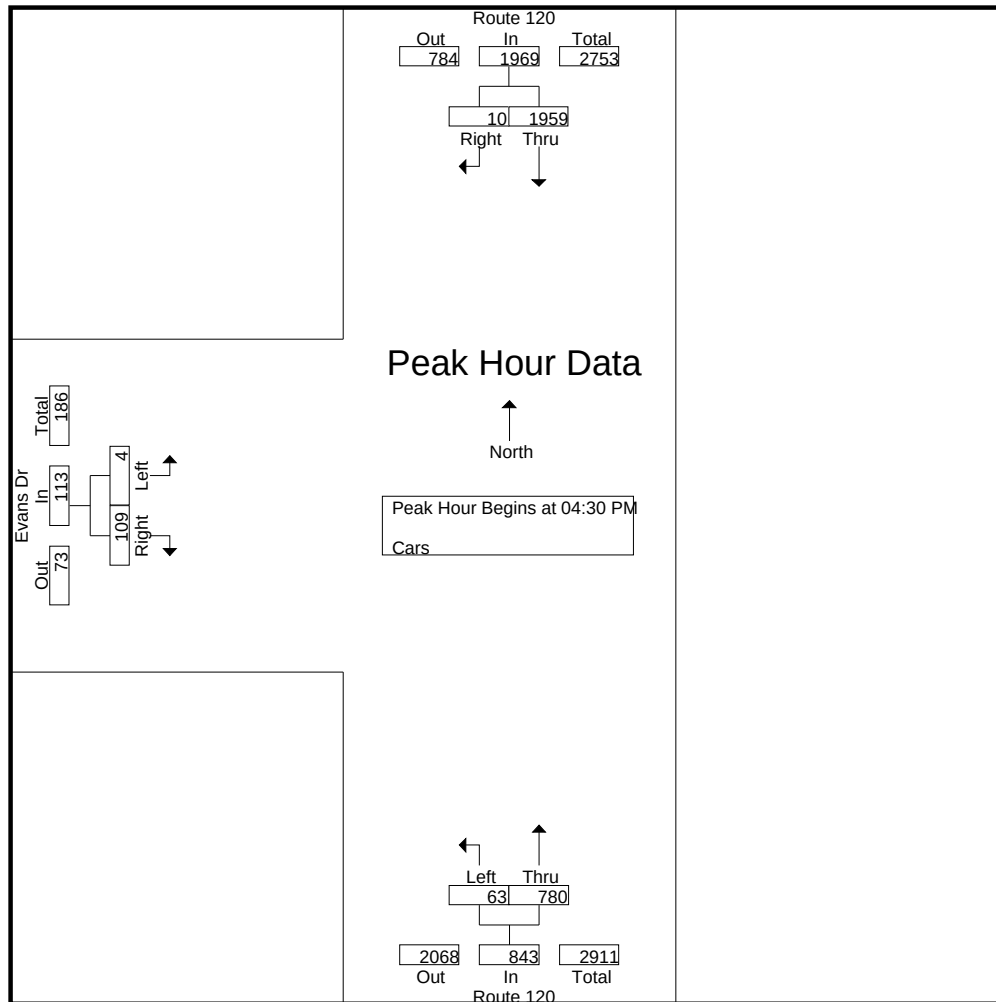
Groups Printed- Cars

	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right		Left	Thru		Left	Right		Int. Total
02:00 PM	256	2		29	216		0	53		556
02:15 PM	341	4		24	232		0	31		632
02:30 PM	339	5		29	258		0	29		660
02:45 PM	338	11		29	268		1	36		683
Total	1274	22		111	974		1	149		2531
03:00 PM	399	2		20	205		2	50		678
03:15 PM	380	1		10	177		2	38		608
03:30 PM	468	1		14	180		1	25		689
03:45 PM	445	2		12	205		1	21		686
Total	1692	6		56	767		6	134		2661
04:00 PM	422	2		12	181		0	29		646
04:15 PM	492	2		10	180		0	28		712
04:30 PM	466	0		19	188		2	29		704
04:45 PM	474	8		13	199		1	19		714
Total	1854	12		54	748		3	105		2776
05:00 PM	492	1		18	191		1	32		735
05:15 PM	527	1		13	202		0	29		772
05:30 PM	358	0		6	160		2	15		541
05:45 PM	282	1		10	139		0	11		443
Total	1659	3		47	692		3	87		2491
Grand Total	6479	43		268	3181		13	475		10459
Apprch %	99.3	0.7		7.8	92.2		2.7	97.3		
Total %	61.9	0.4		2.6	30.4		0.1	4.5		

	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	466	0	466	19	188	207	2	29	31	704
04:45 PM	474	8	482	13	199	212	1	19	20	714
05:00 PM	492	1	493	18	191	209	1	32	33	735
05:15 PM	527	1	528	13	202	215	0	29	29	772
Total Volume	1959	10	1969	63	780	843	4	109	113	2925
% App. Total	99.5	0.5		7.5	92.5		3.5	96.5		
PHF	.929	.313	.932	.829	.965	.980	.500	.852	.856	.947

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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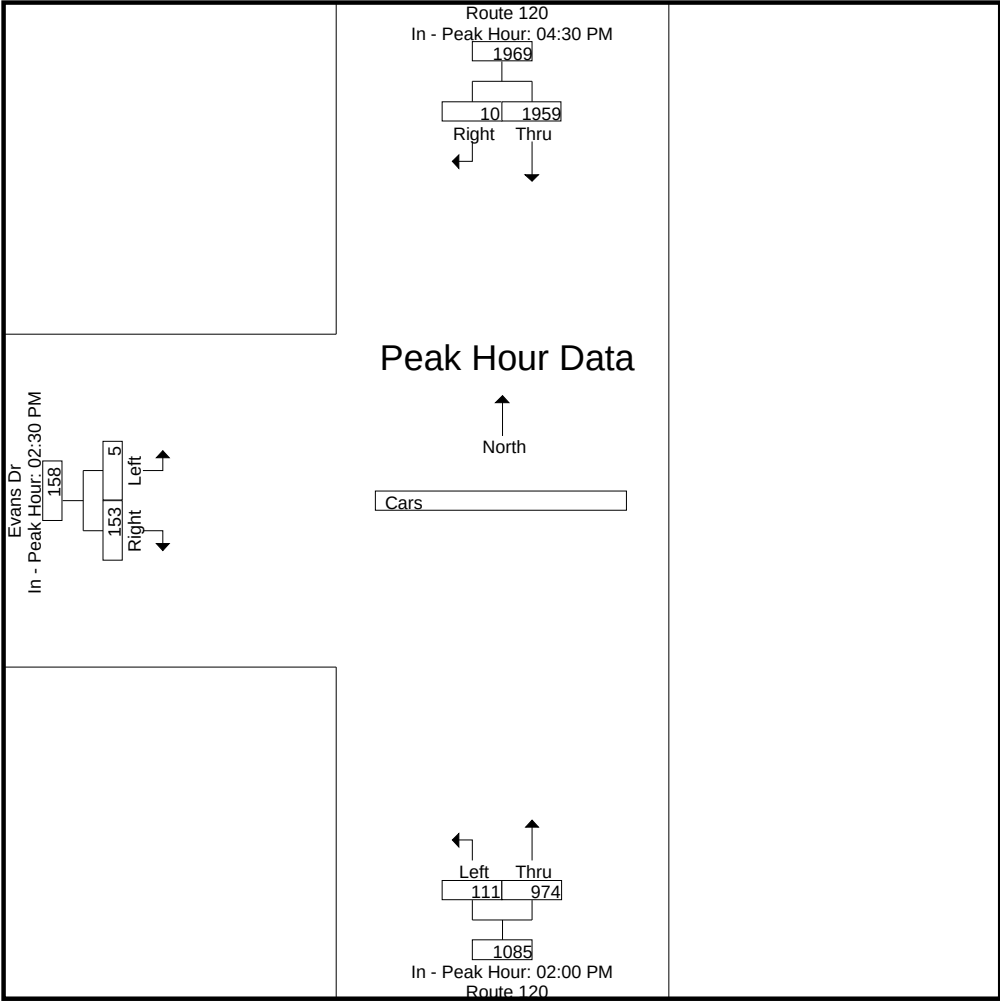


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			02:00 PM			02:30 PM		
+0 mins.	466	0	466	29	216	245	0	29	29
+15 mins.	474	8	482	24	232	256	1	36	37
+30 mins.	492	1	493	29	258	287	2	50	52
+45 mins.	527	1	528	29	268	297	2	38	40
Total Volume	1959	10	1969	111	974	1085	5	153	158
% App. Total	99.5	0.5		10.2	89.8		3.2	96.8	
PHF	.929	.313	.932	.957	.909	.913	.625	.765	.760

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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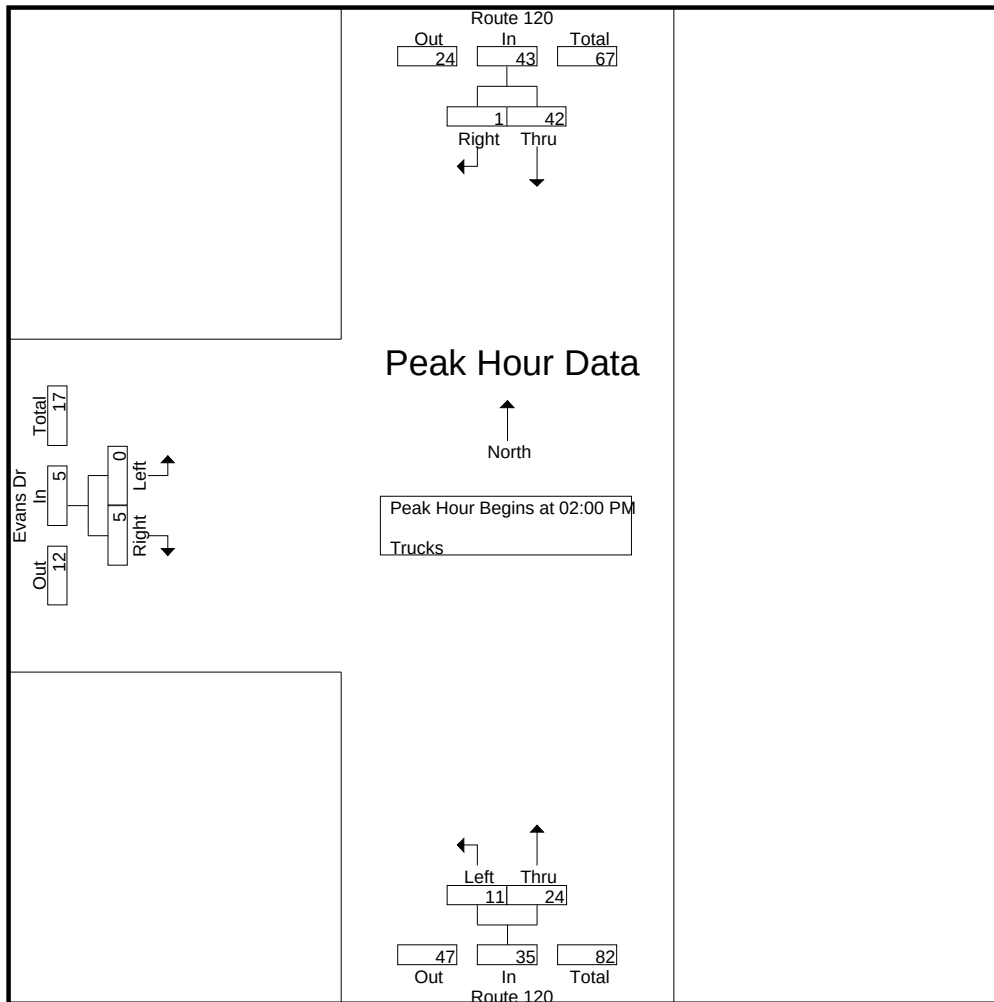
Groups Printed- Trucks

	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right		Left	Thru		Left	Right		Int. Total
02:00 PM	12	0		2	7		0	3		24
02:15 PM	1	1		4	7		0	1		14
02:30 PM	16	0		4	5		0	1		26
02:45 PM	13	0		1	5		0	0		19
Total	42	1		11	24		0	5		83
03:00 PM	5	0		1	5		0	0		11
03:15 PM	5	0		2	4		0	0		11
03:30 PM	5	1		0	10		0	0		16
03:45 PM	7	0		1	7		0	0		15
Total	22	1		4	26		0	0		53
04:00 PM	5	0		1	0		0	0		6
04:15 PM	5	0		0	3		0	0		8
04:30 PM	5	0		1	4		0	0		10
04:45 PM	4	0		0	8		0	0		12
Total	19	0		2	15		0	0		36
05:00 PM	4	0		0	2		0	0		6
05:15 PM	5	0		0	3		0	0		8
05:30 PM	5	0		0	5		0	0		10
05:45 PM	2	0		0	2		0	0		4
Total	16	0		0	12		0	0		28
Grand Total	99	2		17	77		0	5		200
Apprch %	98	2		18.1	81.9		0	100		
Total %	49.5	1		8.5	38.5		0	2.5		

	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	12	0	12	2	7	9	0	3	3	24
02:15 PM	1	1	2	4	7	11	0	1	1	14
02:30 PM	16	0	16	4	5	9	0	1	1	26
02:45 PM	13	0	13	1	5	6	0	0	0	19
Total Volume	42	1	43	11	24	35	0	5	5	83
% App. Total	97.7	2.3		31.4	68.6		0	100		
PHF	.656	.250	.672	.688	.857	.795	.000	.417	.417	.798

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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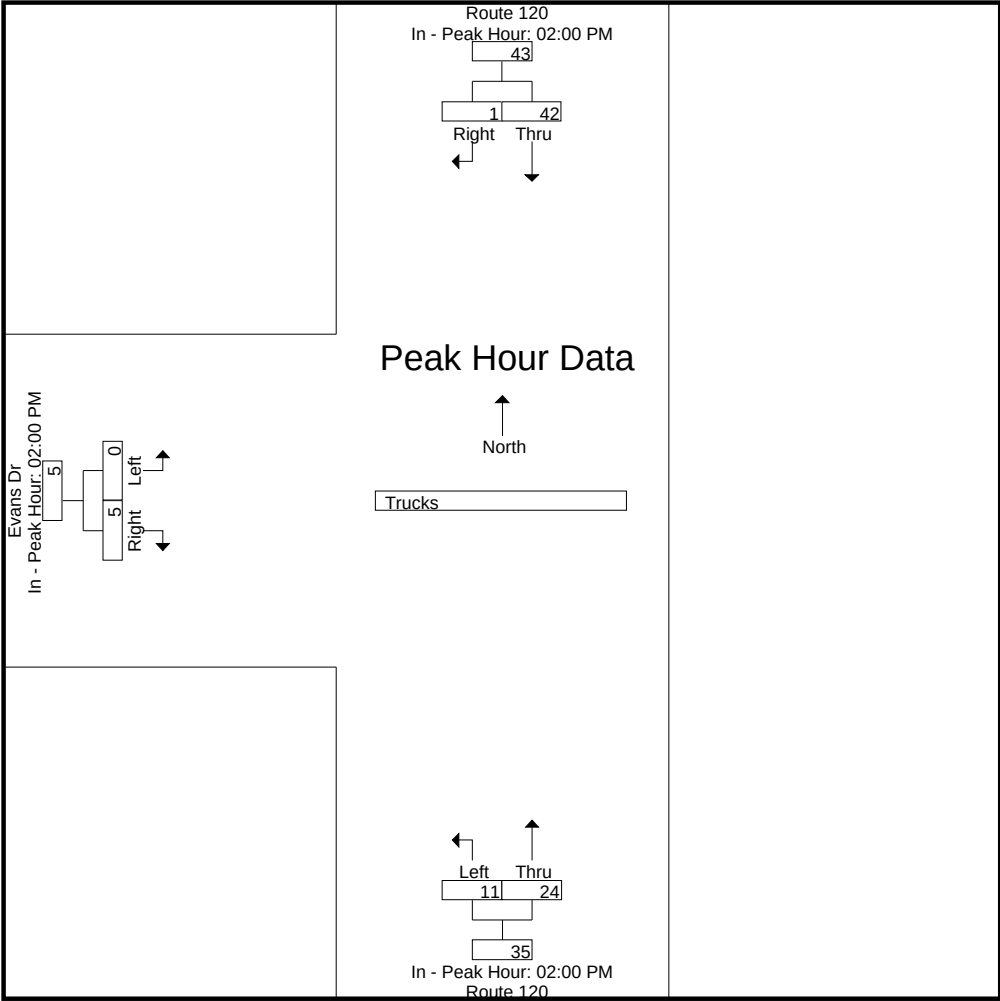


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			02:00 PM		
+0 mins.	12	0	12	2	7	9	0	3	3
+15 mins.	1	1	2	4	7	11	0	1	1
+30 mins.	16	0	16	4	5	9	0	1	1
+45 mins.	13	0	13	1	5	6	0	0	0
Total Volume	42	1	43	11	24	35	0	5	5
% App. Total	97.7	2.3		31.4	68.6		0	100	
PHF	.656	.250	.672	.688	.857	.795	.000	.417	.417

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
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N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
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Start Date : 11/10/2022
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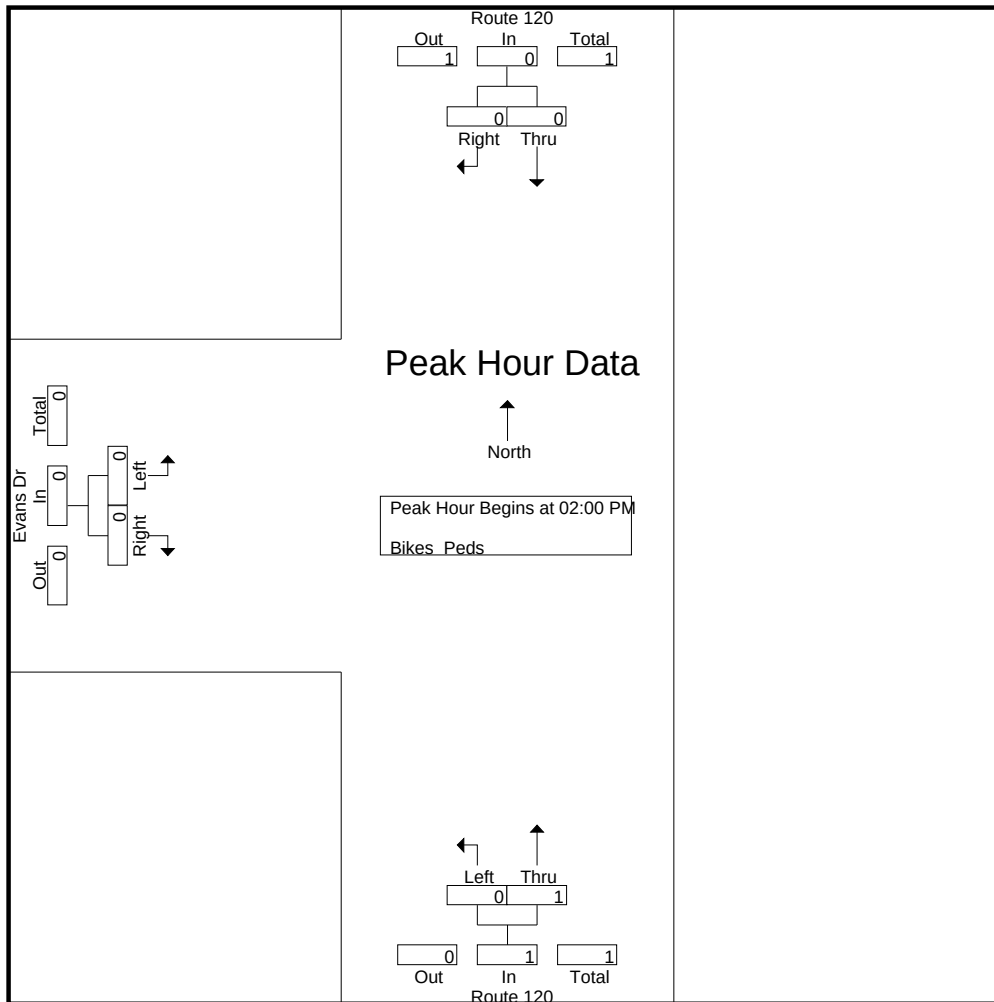
Groups Printed- Bikes Peds

	Route 120 From North			Route 120 From South			Evans Dr From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
02:00 PM	0	0	0	0	1	0	0	0	0	0	1	1
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	0	0	0	1	1
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	1	0	0	0	0	0	1	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	0	0	0	1	1
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	1	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	1	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	2	1	0	0	0	1	2	3
Apprch %	0	0		0	100		0	0				
Total %	0	0		0	100		0	0		33.3	66.7	

	Route 120 From North			Route 120 From South			Evans Dr From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	0	0	0	0	1	1	0	0	0	1
02:15 PM	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
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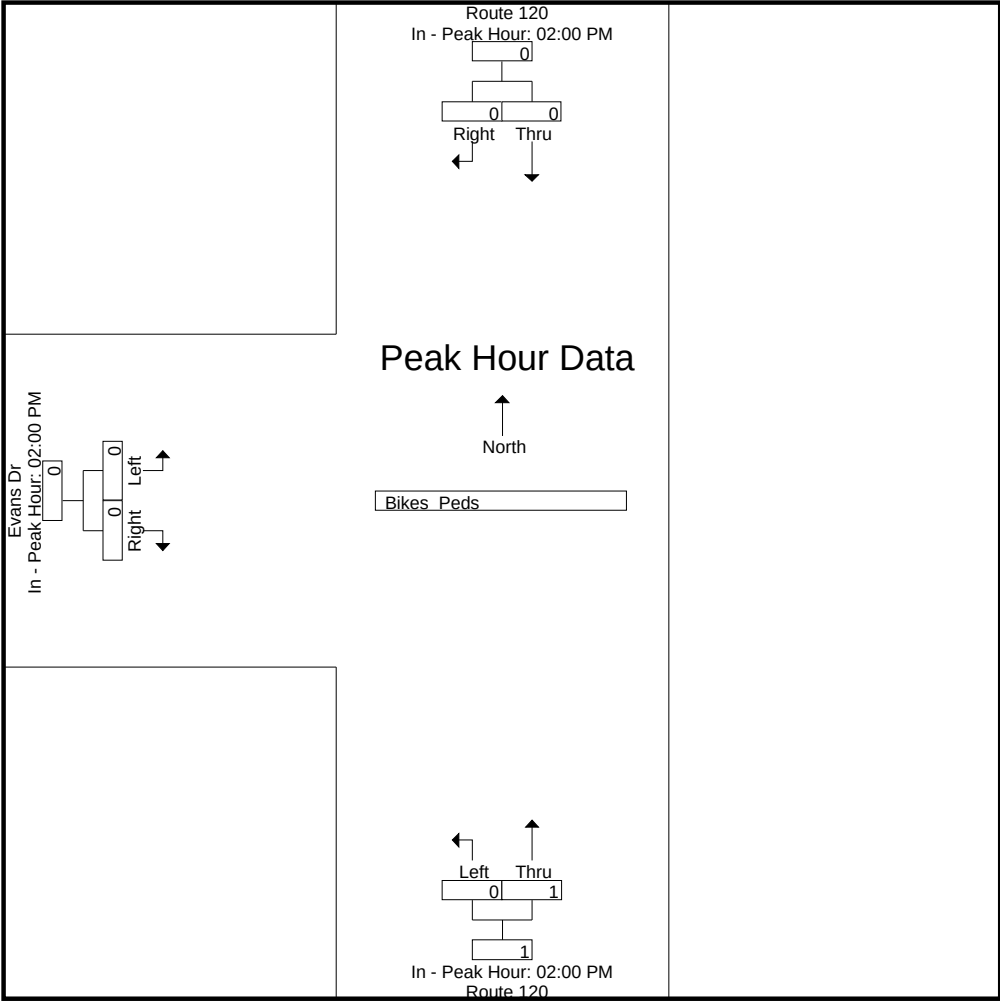


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM			02:00 PM			02:00 PM		
+0 mins.	0	0	0	0	1	1	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0
% App. Total	0	0		0	100		0	0	
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 52933006
Site Code : 52933006
Start Date : 11/10/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 1

Groups Printed- Cars - Trucks

	Route 120 From North		Route 120 From South		Evans Drive From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
11:00 AM	183	3	11	133	7	6	343
11:15 AM	155	1	8	161	2	6	333
11:30 AM	160	2	7	164	0	4	337
11:45 AM	157	2	6	149	0	9	323
Total	655	8	32	607	9	25	1336
12:00 PM	165	0	6	168	1	8	348
12:15 PM	155	3	9	150	3	9	329
12:30 PM	157	2	9	160	3	8	339
12:45 PM	144	1	2	125	1	3	276
Total	621	6	26	603	8	28	1292
Grand Total	1276	14	58	1210	17	53	2628
Apprch %	98.9	1.1	4.6	95.4	24.3	75.7	
Total %	48.6	0.5	2.2	46	0.6	2	
Cars	1268	14	58	1205	17	53	2615
% Cars	99.4	100	100	99.6	100	100	99.5
Trucks	8	0	0	5	0	0	13
% Trucks	0.6	0	0	0.4	0	0	0.5

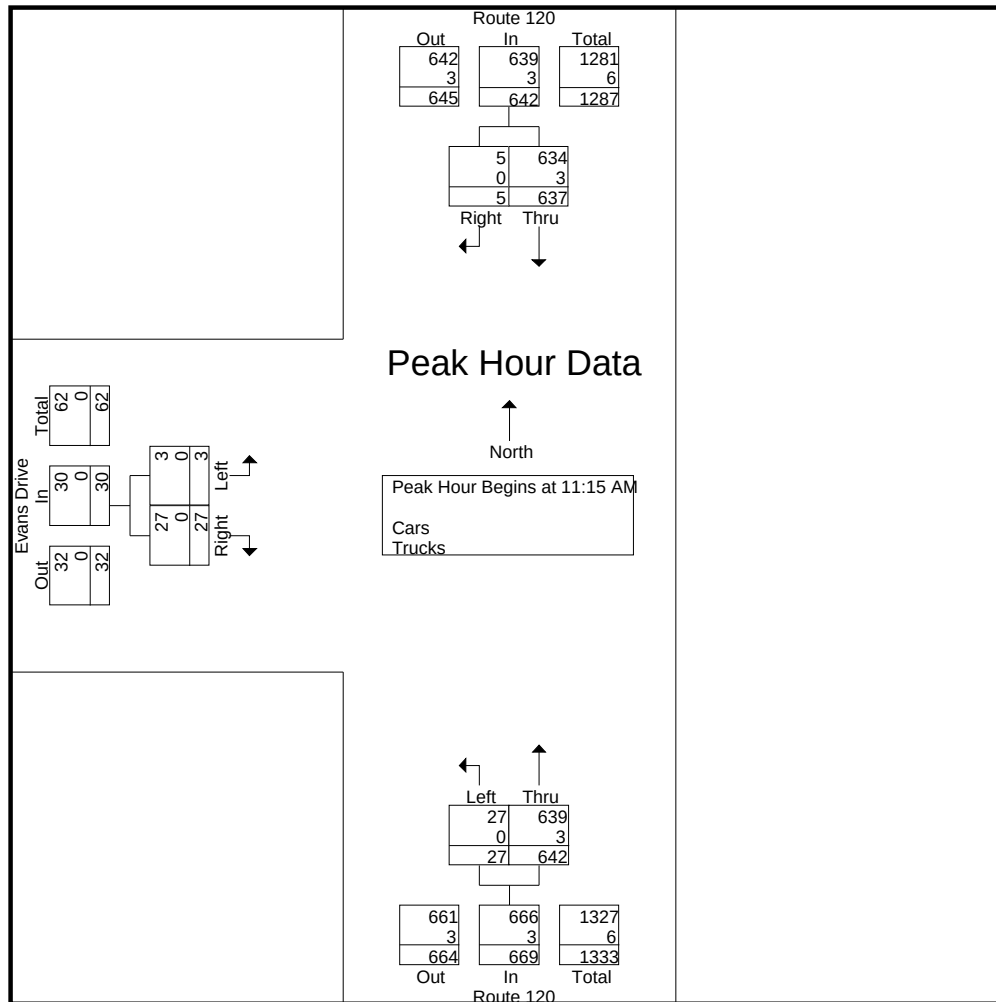
	Route 120 From North			Route 120 From South			Evans Drive From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	155	1	156	8	161	169	2	6	8	333
11:30 AM	160	2	162	7	164	171	0	4	4	337
11:45 AM	157	2	159	6	149	155	0	9	9	323
12:00 PM	165	0	165	6	168	174	1	8	9	348
Total Volume	637	5	642	27	642	669	3	27	30	1341
% App. Total	99.2	0.8		4	96		10	90		
PHF	.965	.625	.973	.844	.955	.961	.375	.750	.833	.963
Cars	634	5	639	27	639	666	3	27	30	1335
% Cars	99.5	100	99.5	100	99.5	99.6	100	100	100	99.6
Trucks	3	0	3	0	3	3	0	0	0	6
% Trucks	0.5	0	0.5	0	0.5	0.4	0	0	0	0.4

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 2

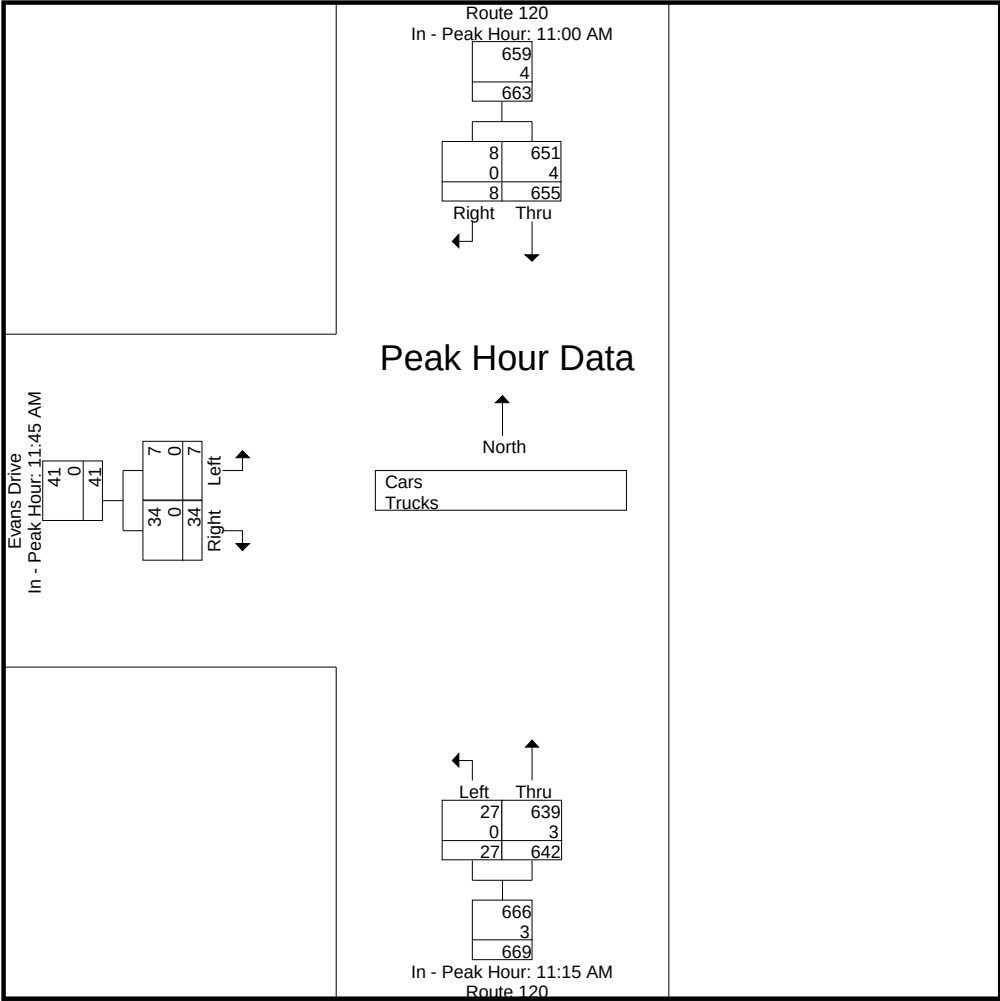


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:00 AM			11:15 AM			11:45 AM		
+0 mins.	183	3	186	8	161	169	0	9	9
+15 mins.	155	1	156	7	164	171	1	8	9
+30 mins.	160	2	162	6	149	155	3	9	12
+45 mins.	157	2	159	6	168	174	3	8	11
Total Volume	655	8	663	27	642	669	7	34	41
% App. Total	98.8	1.2		4	96		17.1	82.9	
PHF	.895	.667	.891	.844	.955	.961	.583	.944	.854
Cars	651	8	659	27	639	666	7	34	41
% Cars	99.4	100	99.4	100	99.5	99.6	100	100	100
Trucks	4	0	4	0	3	3	0	0	0
% Trucks	0.6	0	0.6	0	0.5	0.4	0	0	0

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 120
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S6
 Site Code : 52933006
 Start Date : 11/12/2022
 Page No : 4

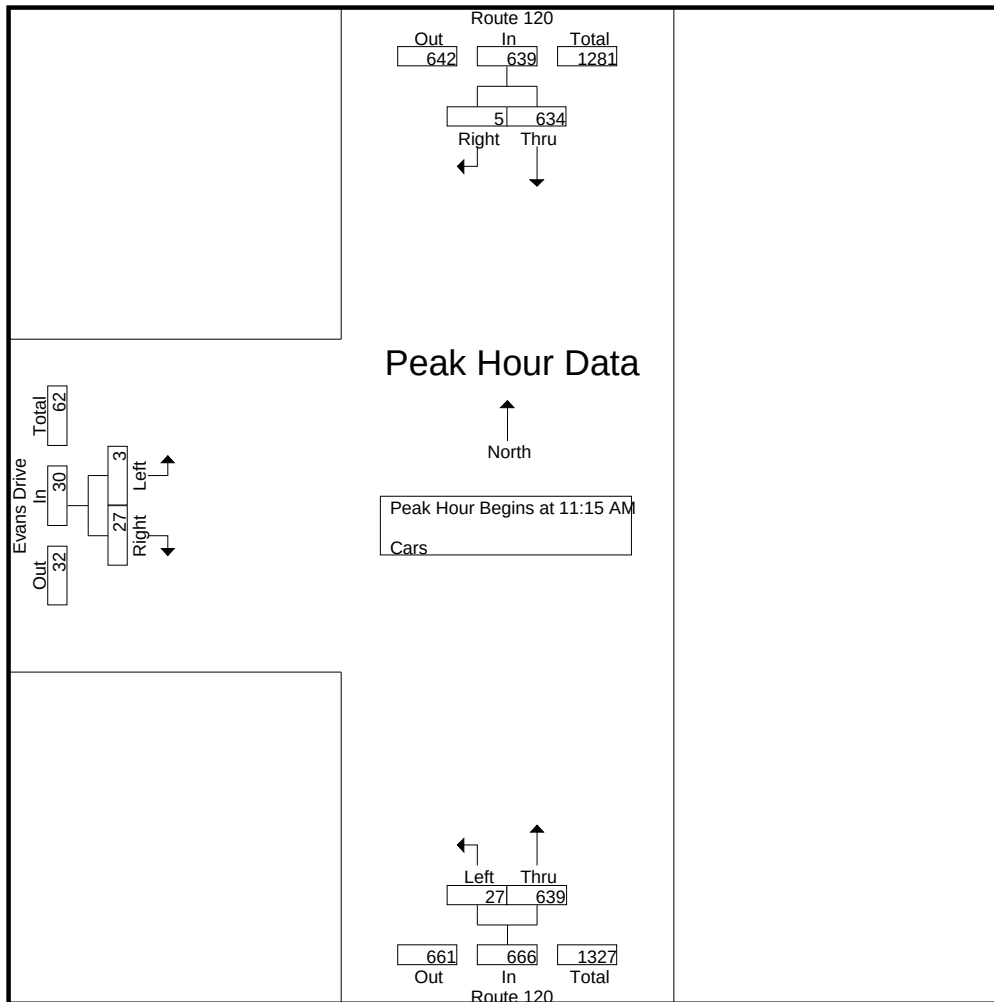
Groups Printed- Cars

	Route 120 From North			Route 120 From South			Evans Drive From West			
Start Time	Thru	Right		Left	Thru		Left	Right		Int. Total
11:00 AM	181	3		11	133		7	6		341
11:15 AM	153	1		8	160		2	6		330
11:30 AM	160	2		7	163		0	4		336
11:45 AM	157	2		6	148		0	9		322
Total	651	8		32	604		9	25		1329
12:00 PM	164	0		6	168		1	8		347
12:15 PM	154	3		9	148		3	9		326
12:30 PM	156	2		9	160		3	8		338
12:45 PM	143	1		2	125		1	3		275
Total	617	6		26	601		8	28		1286
Grand Total	1268	14		58	1205		17	53		2615
Apprch %	98.9	1.1		4.6	95.4		24.3	75.7		
Total %	48.5	0.5		2.2	46.1		0.7	2		

	Route 120 From North			Route 120 From South			Evans Drive From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	153	1	154	8	160	168	2	6	8	330
11:30 AM	160	2	162	7	163	170	0	4	4	336
11:45 AM	157	2	159	6	148	154	0	9	9	322
12:00 PM	164	0	164	6	168	174	1	8	9	347
Total Volume	634	5	639	27	639	666	3	27	30	1335
% App. Total	99.2	0.8		4.1	95.9		10	90		
PHF	.966	.625	.974	.844	.951	.957	.375	.750	.833	.962

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 5

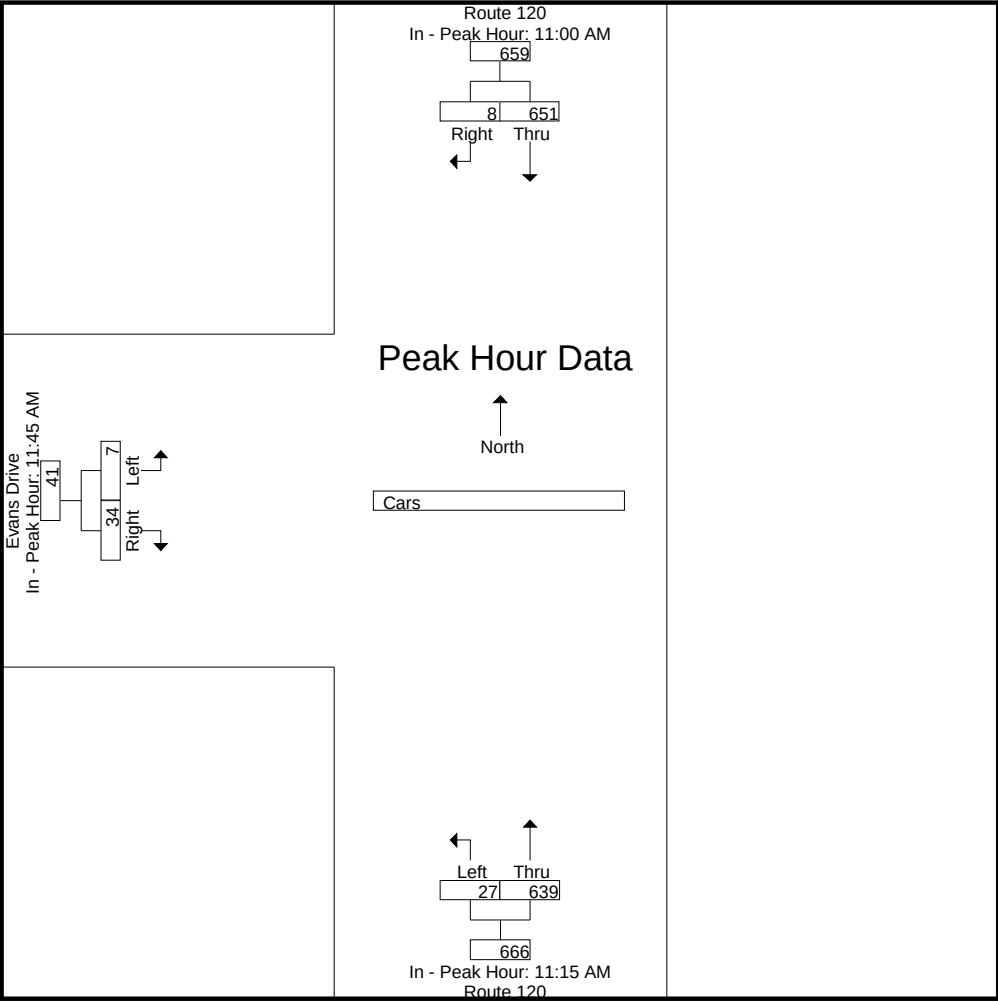


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:00 AM			11:15 AM			11:45 AM		
+0 mins.	181	3	184	8	160	168	0	9	9
+15 mins.	153	1	154	7	163	170	1	8	9
+30 mins.	160	2	162	6	148	154	3	9	12
+45 mins.	157	2	159	6	168	174	3	8	11
Total Volume	651	8	659	27	639	666	7	34	41
% App. Total	98.8	1.2		4.1	95.9		17.1	82.9	
PHF	.899	.667	.895	.844	.951	.957	.583	.944	.854

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Route 120
 E/W Street : Evans Drive
 City/State : Lebanon, NH
 Weather : Clear

File Name : 529330S6
 Site Code : 52933006
 Start Date : 11/12/2022
 Page No : 7

Groups Printed- Trucks

	Route 120 From North		Route 120 From South		Evans Drive From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
11:00 AM	2	0	0	0	0	0	2
11:15 AM	2	0	0	1	0	0	3
11:30 AM	0	0	0	1	0	0	1
11:45 AM	0	0	0	1	0	0	1
Total	4	0	0	3	0	0	7
12:00 PM	1	0	0	0	0	0	1
12:15 PM	1	0	0	2	0	0	3
12:30 PM	1	0	0	0	0	0	1
12:45 PM	1	0	0	0	0	0	1
Total	4	0	0	2	0	0	6
Grand Total	8	0	0	5	0	0	13
Apprch %	100	0	0	100	0	0	
Total %	61.5	0	0	38.5	0	0	

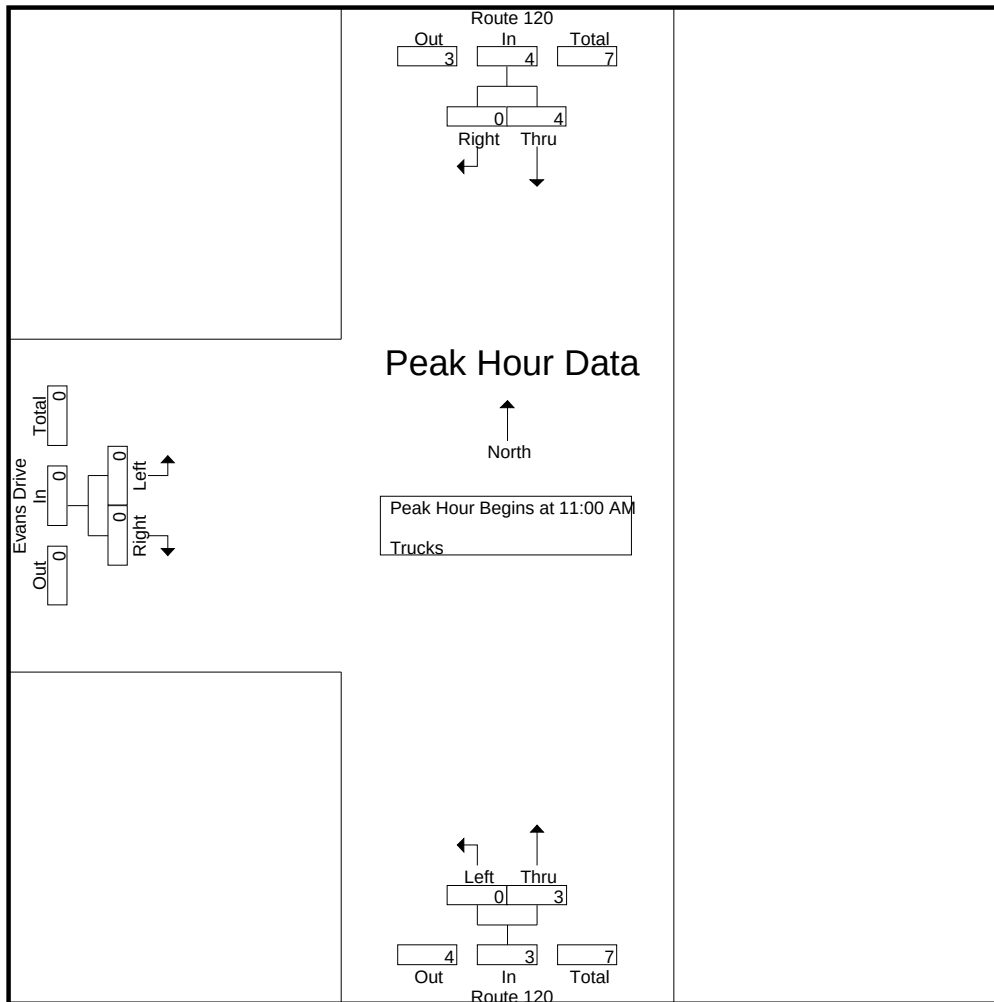
	Route 120 From North			Route 120 From South			Evans Drive From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	2	0	2	0	0	0	0	0	0	2
11:15 AM	2	0	2	0	1	1	0	0	0	3
11:30 AM	0	0	0	0	1	1	0	0	0	1
11:45 AM	0	0	0	0	1	1	0	0	0	1
Total Volume	4	0	4	0	3	3	0	0	0	7
% App. Total	100	0		0	100		0	0		
PHF	.500	.000	.500	.000	.750	.750	.000	.000	.000	.583

Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 8

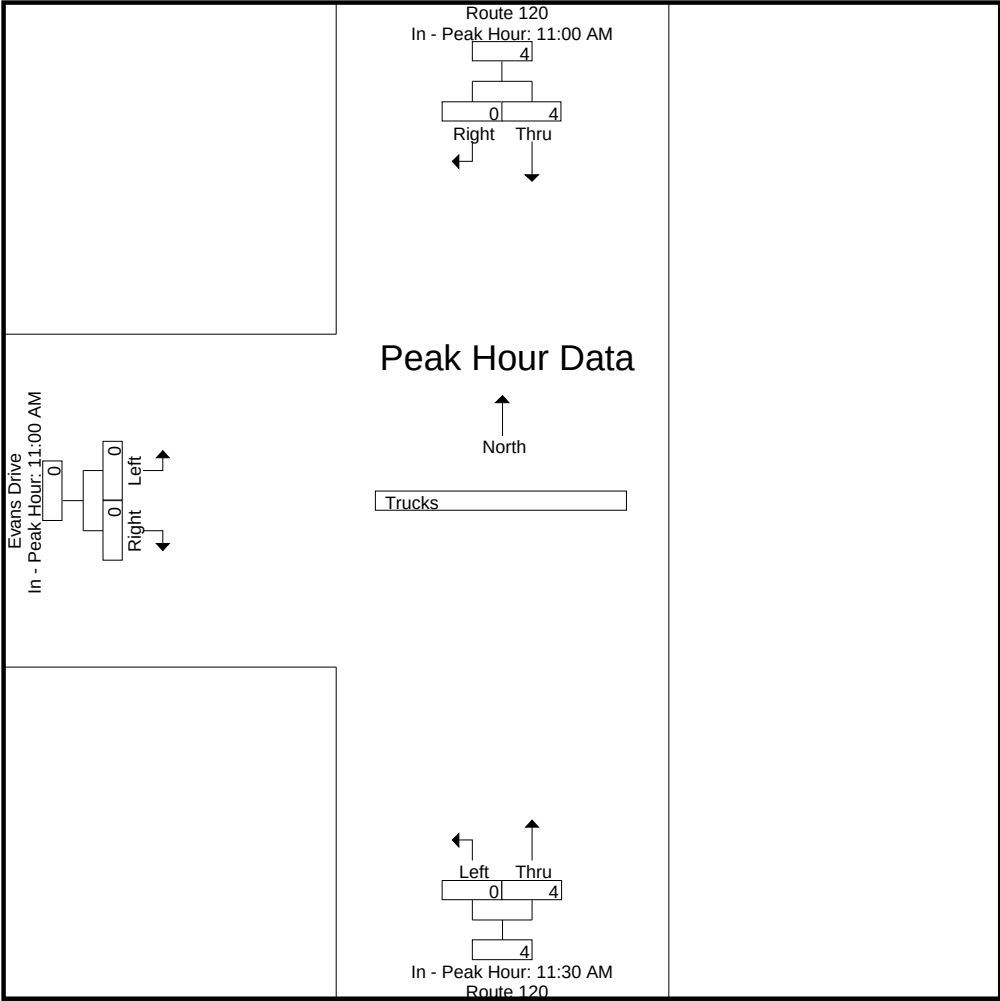


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:00 AM			11:30 AM			11:00 AM		
+0 mins.	2	0	2	0	1	1	0	0	0
+15 mins.	2	0	2	0	1	1	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	2	2	0	0	0
Total Volume	4	0	4	0	4	4	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.500	.000	.500	.000	.500	.500	.000	.000	.000

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 10

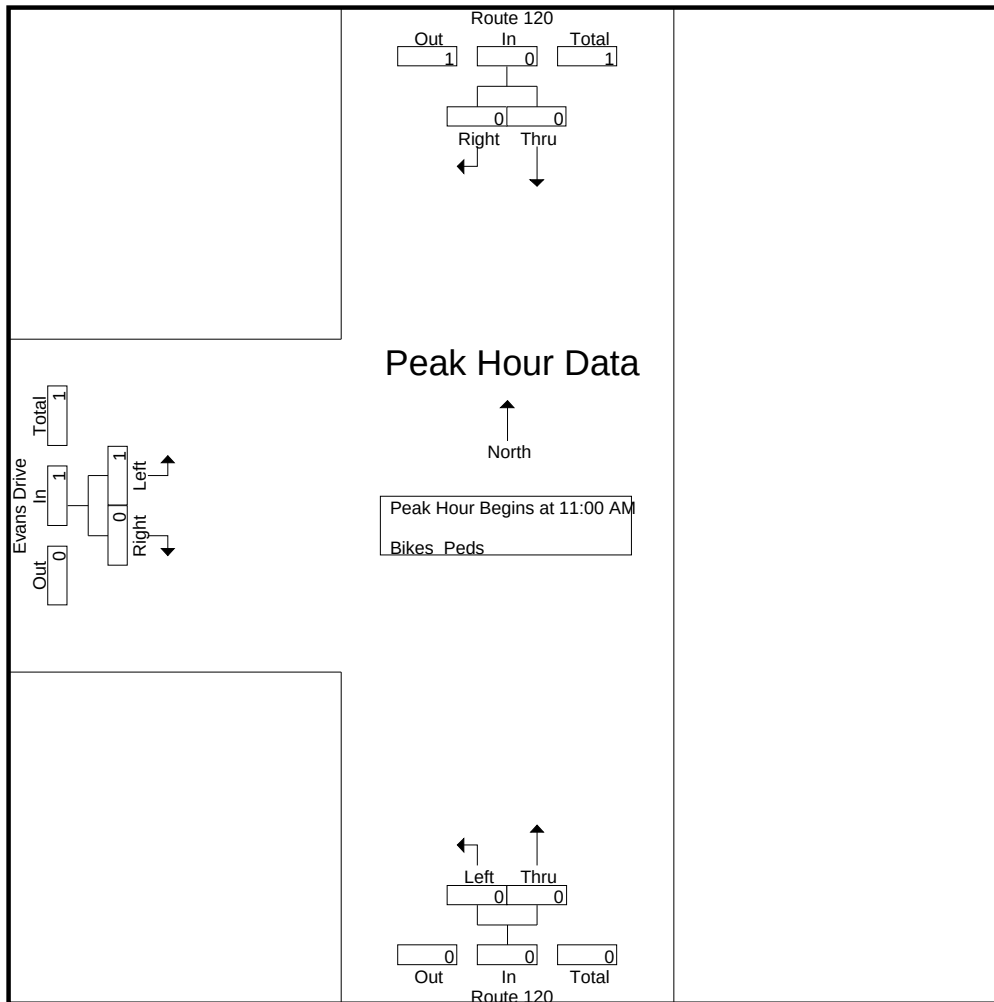
Groups Printed- Bikes Peds

	Route 120 From North			Route 120 From South			Evans Drive From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	1	0	0	0	1	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	1	0	0	0	1	1
Apprch %	0	0		0	0		100	0				
Total %	0	0		0	0		100	0		0	100	

	Route 120 From North			Route 120 From South			Evans Drive From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 11

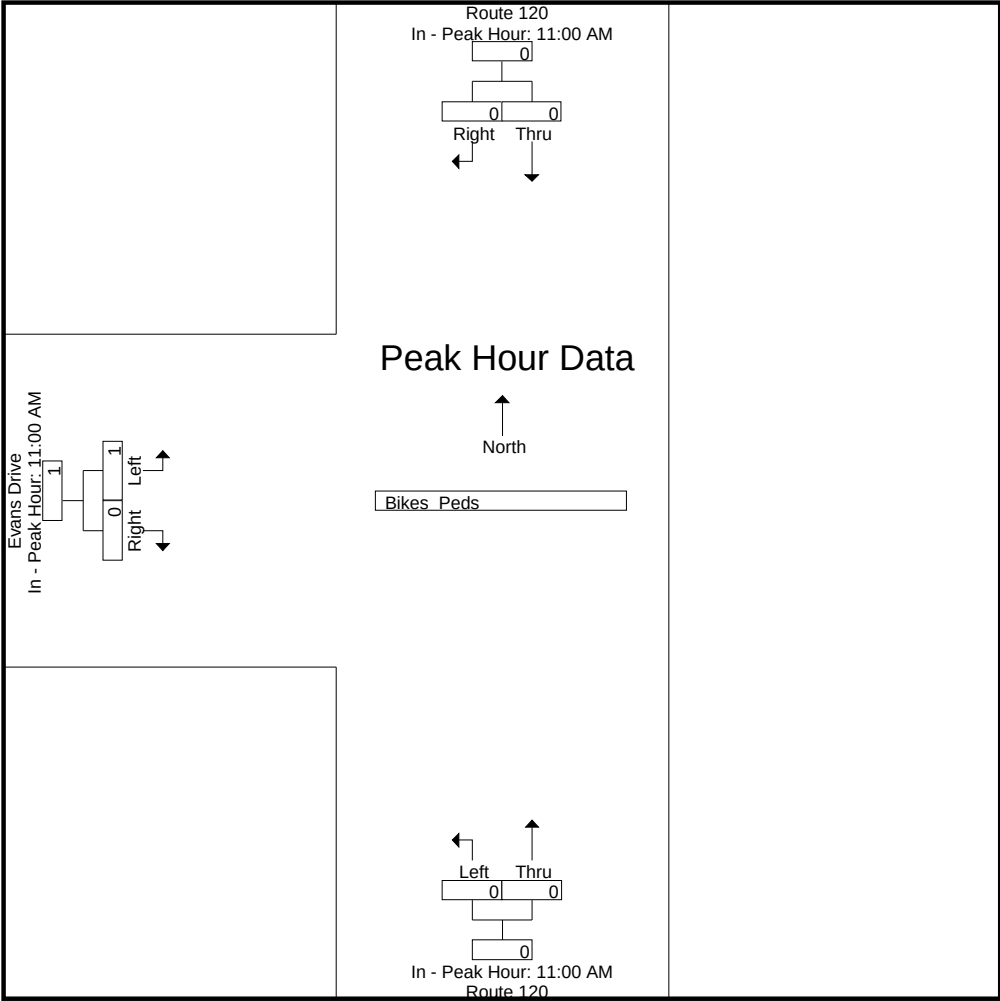


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	0	1	0	1
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250

N/S Street : Route 120
E/W Street : Evans Drive
City/State : Lebanon, NH
Weather : Clear

File Name : 529330S6
Site Code : 52933006
Start Date : 11/12/2022
Page No : 12



Traffic-Volume Adjustment Data

Year 2019 Monthly Data

Town: Lebanon
Station: 02253025
Location: NH 120 1 mile south of Hanover TL (south of Lahaye Dr)
Group: 4

<u>Month</u>	<u>ADT</u>	<u>Adjustment to Average</u>	<u>Adjustment to Peak</u>
January	19,419	1.04	1.14
February	19,789	1.02	1.12
March	19,597	1.03	1.13
April	20,616	0.98	1.07
May	20,764	0.97	1.07
June	20,272	0.99	1.09
July	20,301	0.99	1.09
August	20,252	0.99	1.09
September	20,293	0.99	1.09
October	22,157	0.91	1.00
November	19,544	1.03	1.13
December	18,300	1.10	1.21
AADT:	20,106		
Peak Month:	22,157		

LOCATION INFO	
Location ID	02253025
Type	SPOT
Funct'l Class	4
Located On	NH Route 120
Loc On Alias	NH 120 1 MILE SOUTH OF HANOVER TL (SB-NB) (01253114-01253115)
Direction	2-WAY

County	GRAFTON
Community	LEBANON
MPO ID	
HPMS ID	
Agency	New Hampshire DOT

Weekday AM Peak:

$$2,322/1,790 = x 1.297$$

School PM Peak:

$$1,556/1,476 = x 1.054$$

Weekday PM Peak:

$$2,065/1,734 = x 1.191$$

Weekday Daily:

$$23,322/20,340 = x 1.147$$

INTERVAL:15-MIN						
Time	15-min Interval				Hourly Count	% Diff
	1st	2nd	3rd	4th		
0:00-1:00	16	20	15	9	60	0.0
1:00-2:00	8	12	8	8	36	-22.2
2:00-3:00	9	8	9	10	36	-24.4
3:00-4:00	8	11	12	12	43	-2.3
4:00-5:00	14	26	42	40	122	-21.9
5:00-6:00	53	83	135	161	432	-18.1
6:00-7:00	238	319	419	327	1303	-15.3
7:00-8:00	352	450	534	454	1790	-12.4
8:00-9:00	396	372	359	322	1449	-5.2
9:00-10:00	297	294	325	302	1218	-9.8
10:00-11:00	300	294	304	295	1193	-9.3
11:00-12:00	299	290	324	322	1235	-6.0
12:00-13:00	342	336	335	315	1328	-3.3
13:00-14:00	318	306	337	325	1286	-13.1
14:00-15:00	345	360	400	371	1476	-8.2
15:00-16:00	393	405	433	407	1638	-12.2
16:00-17:00	436	407	459	432	1734	-18.4
17:00-18:00	487	389	330	263	1469	-11.3
18:00-19:00	247	250	241	173	911	-6.5
19:00-20:00	172	182	170	130	654	-13.3
20:00-21:00	114	95	86	73	368	-10.3
21:00-22:00	83	73	59	46	261	-4.9
22:00-23:00	42	46	42	34	164	-17.8
23:00-24:00	39	38	35	22	134	29.1
Total	Counts = 22				20340	-10.6

Count Criteria

Local Id	02253025
Start Date	11/01/2022
End Date	11/30/2022
Aggregation	AVG
Include Abnormal	False
Selected Days	Monday Tuesday Wednesday Thursday Friday

INTERVAL:60-MIN						
Time	60-min Interval				Hourly Count	% Diff
	1st	2nd	3rd	4th		
0:00-1:00	-	-	-	-	68	12.5
1:00-2:00	-	-	-	-	45	0.0
2:00-3:00	-	-	-	-	40	-14.0
3:00-4:00	-	-	-	-	47	6.6
4:00-5:00	-	-	-	-	123	-21.1
5:00-6:00	-	-	-	-	413	-22.6
6:00-7:00	-	-	-	-	1397	-8.4
7:00-8:00	-	-	-	-	2322	13.6
8:00-9:00	-	-	-	-	1784	15.6
9:00-10:00	-	-	-	-	1339	-0.3
10:00-11:00	-	-	-	-	1281	-2.2
11:00-12:00	-	-	-	-	1359	3.5
12:00-13:00	-	-	-	-	1493	8.4
13:00-14:00	-	-	-	-	1405	-4.3
14:00-15:00	-	-	-	-	1556	-3.0
15:00-16:00	-	-	-	-	1759	-5.0
16:00-17:00	-	-	-	-	2065	-1.0
17:00-18:00	-	-	-	-	1772	7.4
18:00-19:00	-	-	-	-	1096	12.0
19:00-20:00	-	-	-	-	744	-0.4
20:00-21:00	-	-	-	-	475	15.2
21:00-22:00	-	-	-	-	328	17.9
22:00-23:00	-	-	-	-	225	13.8
23:00-24:00	-	-	-	-	186	60.1
Total	Counts = 21				23322	3.1

Count Criteria

Local Id	02253025
Start Date	11/01/2019
End Date	11/30/2019
Aggregation	AVG
Include Abnormal	False
Selected Days	Monday Tuesday Wednesday Thursday Friday

LOCATION INFO			
Location ID	02253025	County	GRAFTON
Type	SPOT	Community	LEBANON
Funct'l Class	4	MPO ID	
Located On	NH Route 120	HPMS ID	
Loc On Alias	NH 120 1 MILE SOUTH OF HANOVER TL (SB-NB) (01253114-01253115)	Agency	New Hampshire DOT
Direction	2-WAY		

Saturday Peak:

$$908/855 = x 1.062$$

Saturday Daily:

$$11,815/10,657 = x 1.109$$

INTERVAL:15-MIN						
Time	15-min Interval				Hourly Count	% Diff
	1st	2nd	3rd	4th		
0:00-1:00	23	25	17	12	77	24.8
1:00-2:00	12	15	9	8	44	-2.2
2:00-3:00	9	5	9	9	32	-35.9
3:00-4:00	5	8	8	10	31	-34.7
4:00-5:00	11	13	24	16	64	-81.5
5:00-6:00	20	37	53	49	159	-106.1
6:00-7:00	79	114	150	93	436	-110.8
7:00-8:00	99	116	139	118	472	-124.4
8:00-9:00	110	108	142	123	483	-103.8
9:00-10:00	111	134	154	165	564	-81.7
10:00-11:00	178	193	187	188	746	-54.9
11:00-12:00	206	208	204	217	835	-44.4
12:00-13:00	221	208	228	198	855	-46.5
13:00-14:00	196	195	209	188	788	-60.2
14:00-15:00	201	184	216	206	807	-66.1
15:00-16:00	186	185	197	187	755	-84.1
16:00-17:00	199	184	195	189	767	-92.4
17:00-18:00	190	164	158	161	673	-83.9
18:00-19:00	163	179	187	133	662	-37.9
19:00-20:00	147	167	157	107	578	-25.5
20:00-21:00	87	73	74	74	308	-27.9
21:00-22:00	71	61	60	54	246	-10.8
22:00-23:00	42	47	36	33	158	-21.5
23:00-24:00	38	30	28	21	117	15.7
Total	Counts = 4				10657	-71.9

Count Criteria

Local Id	02253025
Start Date	11/01/2022
End Date	11/30/2022
Aggregation	AVG
Include Abnormal	False
Selected Days	Saturday

INTERVAL:60-MIN						
Time	60-min Interval				Hourly Count	% Diff
	1st	2nd	3rd	4th		
0:00-1:00	-	-	-	-	80	28.6
1:00-2:00	-	-	-	-	68	40.7
2:00-3:00	-	-	-	-	43	-6.7
3:00-4:00	-	-	-	-	33	-28.6
4:00-5:00	-	-	-	-	59	-88.2
5:00-6:00	-	-	-	-	128	-120.7
6:00-7:00	-	-	-	-	441	-110.0
7:00-8:00	-	-	-	-	541	-115.7
8:00-9:00	-	-	-	-	564	-92.1
9:00-10:00	-	-	-	-	670	-66.9
10:00-11:00	-	-	-	-	821	-45.9
11:00-12:00	-	-	-	-	908	-36.4
12:00-13:00	-	-	-	-	901	-41.5
13:00-14:00	-	-	-	-	861	-52.1
14:00-15:00	-	-	-	-	850	-61.4
15:00-16:00	-	-	-	-	857	-73.4
16:00-17:00	-	-	-	-	824	-86.7
17:00-18:00	-	-	-	-	752	-74.5
18:00-19:00	-	-	-	-	738	-27.4
19:00-20:00	-	-	-	-	603	-21.3
20:00-21:00	-	-	-	-	358	-13.1
21:00-22:00	-	-	-	-	358	26.6
22:00-23:00	-	-	-	-	211	7.4
23:00-24:00	-	-	-	-	146	37.4
Total	Counts = 5				11815	-62.8

Count Criteria

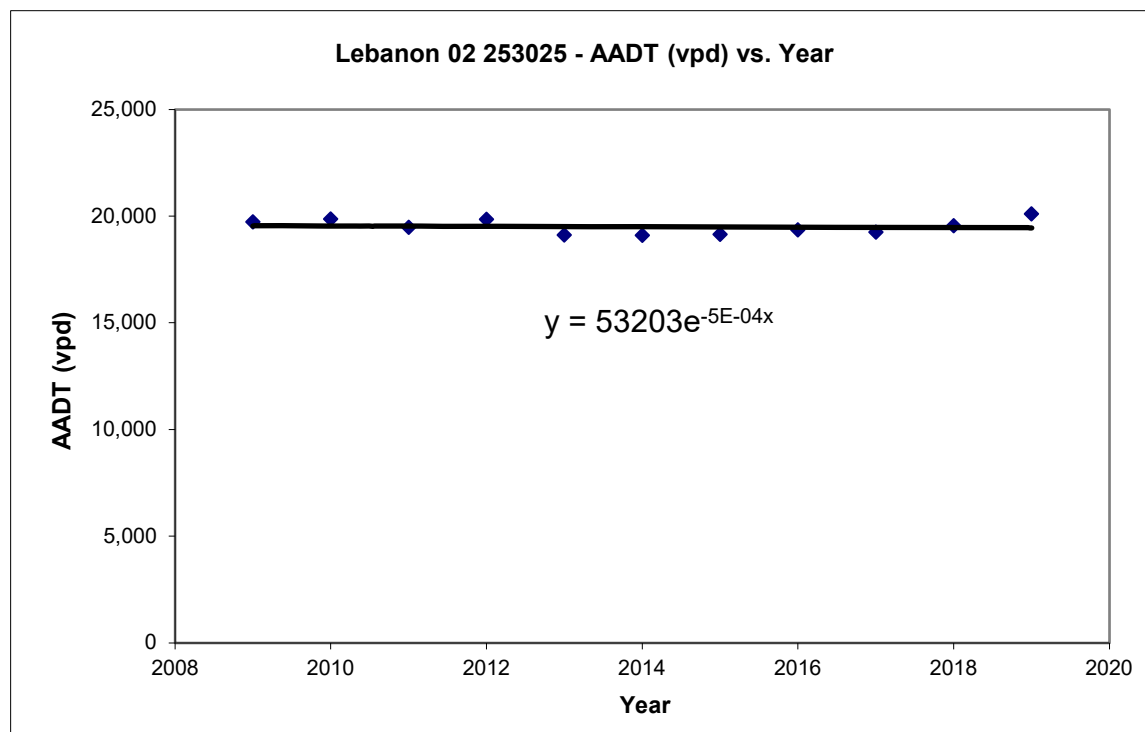
Local Id	02253025
Start Date	11/01/2019
End Date	11/30/2019
Aggregation	AVG
Include Abnormal	False
Selected Days	Saturday

Station 02253025
 Lebanon - NH 120 South of Hanover TL
 Group 4
 Region C
 FC 16

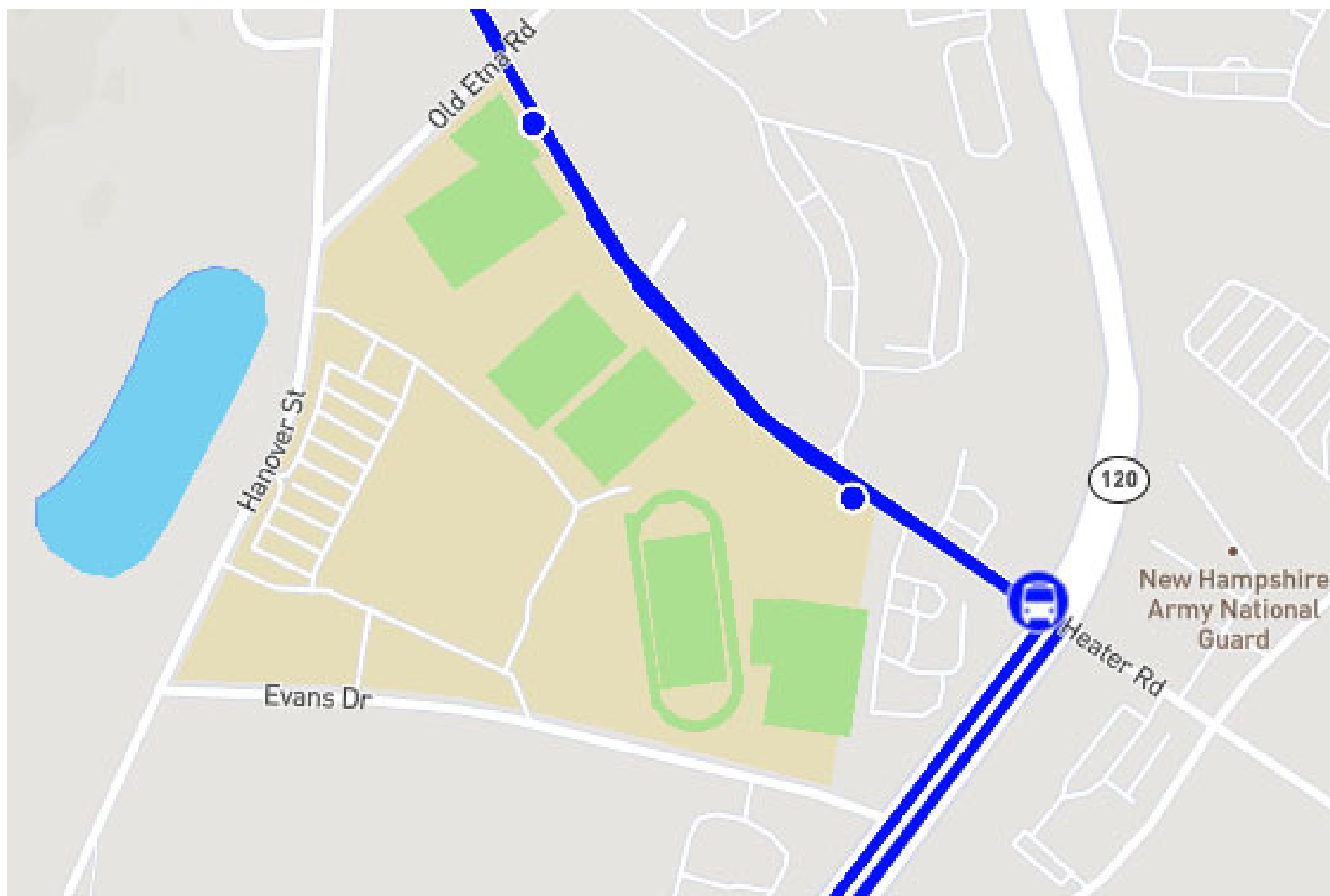
AADT Annual Change

2009	19735	
2010	19873	0.70%
2011	19474	-2.01%
2012	19856	1.96%
2013	19112	-3.75%
2014	19096	-0.08%
2015	19146	0.26%
2016	19358	1.11%
2017	19256	-0.53%
2018	19552	1.54%
2019	20106	2.83%

CAGR	0.19%
Exp	-0.05%
Avg	0.07%



Advance Transit Bus Service Data



BLUE

BLUE						Main @ Allen						
Canaan	Enfield	Lebanon	Heater Rd	DHMC	Vail DMS		DHMC	Heater Rd	Lebanon	Enfield	Canaan	
READ ACROSS									5:15	5:25	5:40	
									6:15	6:25	6:40	
5:40	5:51	5:45	5:49	6:00	6:10	6:14	6:24	6:29	6:37			
		6:10	6:14	6:25	6:35	6:39	6:49	6:54	7:02			
		6:25	6:29	6:40	6:50	6:54	7:04	7:09	7:17			
6:45	6:56	6:45	6:49	7:00	7:10	7:14	7:24	7:29	7:37			
		-	D	7:15	7:25	7:29	7:39	7:44	7:52			
		7:10	7:14	7:27	7:37	7:41	7:51	7:56	8:04			
									8:10			8:20
8:35	8:46	7:25	7:29	7:40	7:50	7:54	8:05	8:10	8:18			
		7:40	7:44	7:56	8:07	8:11	8:24	8:29	8:37			
		8:00	8:04	8:15	8:25	8:29	8:39	8:44	8:52			
		8:15	8:19	8:30	8:40	8:44	8:54	8:59	9:07			
		8:30	8:34	8:45	8:55	8:59	9:09	9:14	9:22			
		8:45	8:49	9:00	9:10	9:14	9:24	9:29	9:37			
		9:00										
		9:00	9:04	9:15	9:25	9:29	9:39	9:44	9:52			
		9:15	9:19	9:30	9:40	9:44	9:54	9:59	10:07			
		9:30	9:34	9:45	9:55	9:59	10:09	10:14	10:22			
		9:45	9:49	10:00	10:10	10:14	10:24	10:29	10:37			
		10:00	10:04	10:15	10:25	10:29	10:39	10:44	10:52			
		10:15	10:19	10:30	10:40	10:44	10:54	10:59	11:07			
		10:30	10:34	10:45	10:55	10:59	11:09	11:14	11:22			
		10:45	10:49	11:00	11:10	11:14	11:24	11:29	11:37			
11:00	11:04	11:15	11:25	11:29	11:39	11:44	11:52					
11:15	11:19	11:30	11:40	11:44	11:54	11:59	12:07					
11:30	11:34	11:45	11:55	11:59	12:09	12:14	12:22					
11:45	11:49	12:00	12:10	12:14	12:24	12:29	12:37					
12:00	12:04	12:15	12:25	12:29	12:39	12:44	12:52					
12:15	12:19	12:30	12:40	12:44	12:54	12:59	1:07					
12:30	12:34	12:45	12:55	12:59	1:09	1:14	1:22					
12:45	12:49	1:00	1:10	1:14	1:24	1:29	1:37					
1:00	1:04	1:15	1:25	1:29	1:39	1:44	1:52					
1:15	1:19	1:30	1:40	1:44	1:54	1:59	2:07					
1:30	1:34	1:45	1:55	1:59	2:09	2:14	2:22					
1:45	1:49	2:00	2:10	2:14	2:24	2:29	2:37					
2:00	2:04	2:15	2:25	2:29	2:39	2:44	2:52					
School year only									2:55	3:05	@ H.S. 3:10	
@ H.S. 3:15	3:20	2:15	2:19	2:30	2:40	2:44	2:54	2:59	3:07			
		2:30	2:34	2:45	2:55	2:59	3:09	3:14	3:22			
		2:45	2:49	3:00	3:10	3:14	3:24	3:29	3:37			
		3:00	3:04	3:15	3:25	3:29	3:39	3:44	3:52			
		3:15	3:19	3:30	3:40	3:44	3:54	3:59	4:07			
							4:05	4:10	4:18			
		3:30	3:34	3:45	3:55	3:59	4:09	4:14	4:22			
		3:40	School year only									
		3:45	3:49	4:00	4:10	4:15	4:27	4:32	4:40			
		4:05	4:09	4:20	4:30	4:35	4:47	4:52	5:02			
4:20	4:24	4:35	4:50	4:54	5:10	5:15	5:23	5:33	5:48			
4:35	4:39	4:50	5:00	5:05	5:20	5:25	5:35					
4:50	4:54	5:05	5:15	5:19	5:32	5:37	5:45					
5:05	5:09	5:20	5:30	5:34	5:45	5:50	6:00			6:10	6:25	
4:43	4:54	5:13										
		5:20	5:24	5:35	5:45	5:49	5:59	6:04	6:12			
		5:50	5:54	6:05	6:15	6:19	6:29	6:34	6:42			
		5:48	5:59	6:13								
		6:15	6:19	6:30	6:38	to Norwich and Wilder on request to US 5 and Dothan Brook School on request						
		6:45	6:49	7:00	7:10							

"D" = DROP ON REQUEST ONLY

AM= light face

PM= bold

Existing Intersection Analysis Worksheets

Intersection

Int Delay, s/veh	35.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	530	0	1	210	3
Future Vol, veh/h	5	530	0	1	210	3
Conflicting Peds, #/hr	0	53	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	59	59	25	25	67	67
Heavy Vehicles, %	0	0	0	0	4	4
Mvmt Flow	8	898	0	4	313	4

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	642	65	0	0	14
Stage 1	12	-	-	-	-
Stage 2	630	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.14
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.236
Pot Cap-1 Maneuver	442	1005	-	-	1591
Stage 1	1016	-	-	-	-
Stage 2	535	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	351	945	-	-	1576
Mov Cap-2 Maneuver	351	-	-	-	-
Stage 1	1006	-	-	-	-
Stage 2	429	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	44.8	0	7.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	930	1576
HCM Lane V/C Ratio	-	-	0.975	0.199
HCM Control Delay (s)	-	-	44.8	7.8
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	17	0.7

2: Hanover St/Hanover St Ext & Old Etna Rd
HCM 6th TWSC

2022 Existing
Weekday AM

Intersection

Int Delay, s/veh	4.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	0	75	185	1	30
Future Vol, veh/h	130	0	75	185	1	30
Conflicting Peds, #/hr	0	11	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	57	57	84	84	83	83
Heavy Vehicles, %	1	1	0	0	2	2
Mvmt Flow	228	0	89	220	1	36

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	240	213	0	0	312
Stage 1	202	-	-	-	-
Stage 2	38	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.12
Critical Hdwy Stg 1	5.41	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.218
Pot Cap-1 Maneuver	750	830	-	-	1248
Stage 1	834	-	-	-	-
Stage 2	987	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	747	819	-	-	1244
Mov Cap-2 Maneuver	747	-	-	-	-
Stage 1	831	-	-	-	-
Stage 2	986	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	747	1244
HCM Lane V/C Ratio	-	-	0.305	0.001
HCM Control Delay (s)	-	-	11.9	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1.3	0

3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2022 Existing
Weekday AM

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	65	5	1	195	145	25
Future Vol, veh/h	65	5	1	195	145	25
Conflicting Peds, #/hr	0	1	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	86	86	77	77
Heavy Vehicles, %	0	0	5	5	4	4
Mvmt Flow	71	5	1	227	188	32

Major/Minor	Minor2	Major1	Major2
-------------	--------	--------	--------

Conflicting Flow All	441	213	228	0	-	0
Stage 1	212	-	-	-	-	-
Stage 2	229	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.245	-	-	-
Pot Cap-1 Maneuver	577	832	1323	-	-	-
Stage 1	828	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	567	825	1313	-	-	-
Mov Cap-2 Maneuver	567	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	807	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
-----------------------	-----	-----	-------	-----	-----

Capacity (veh/h)	1313	-	580	-	-
HCM Lane V/C Ratio	0.001	-	0.131	-	-
HCM Control Delay (s)	7.7	0	12.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

4: Heater Rd & Old Etna Rd
HCM 6th AWSC

2022 Existing
Weekday AM

Intersection

Intersection Delay, s/veh 13.7
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	75	100	85	60	45	95	140	50	20	125	1
Future Vol, veh/h	3	75	100	85	60	45	95	140	50	20	125	1
Peak Hour Factor	0.69	0.69	0.69	0.90	0.90	0.90	0.83	0.83	0.83	0.66	0.66	0.66
Heavy Vehicles, %	4	4	4	2	2	2	4	4	4	6	6	6
Mvmt Flow	4	109	145	94	67	50	114	169	60	30	189	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	12.9			12.5			15.6			12.9		
HCM LOS	B			B			C			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	2%	45%	14%
Vol Thru, %	49%	42%	32%	86%
Vol Right, %	18%	56%	24%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	178	190	146
LT Vol	95	3	85	20
Through Vol	140	75	60	125
RT Vol	50	100	45	1
Lane Flow Rate	343	258	211	221
Geometry Grp	1	1	1	1
Degree of Util (X)	0.546	0.416	0.359	0.378
Departure Headway (Hd)	5.843	5.799	6.121	6.144
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	622	624	589	588
Service Time	3.843	3.812	4.146	4.161
HCM Lane V/C Ratio	0.551	0.413	0.358	0.376
HCM Control Delay	15.6	12.9	12.5	12.9
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	3.3	2	1.6	1.8

5: Route 120 & Old Etna Rd/Etna Rd Queues

2022 Existing
Weekday AM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	103	141	110	113	67	52	2477	343	58	803
v/c Ratio	0.90	0.96	0.87	0.90	0.21	0.54	1.11	0.28	0.59	0.36
Control Delay	123.5	110.4	112.8	120.8	11.4	84.0	83.8	1.1	87.2	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	123.5	110.4	112.8	120.8	11.4	84.0	83.8	1.1	87.2	12.2
Queue Length 50th (ft)	95	95	106	112	0	47	~1370	3	52	173
Queue Length 95th (ft)	#169	#180	#224	#247	43	88	#1380	12	97	202
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	115	147	128	125	315	113	2228	1213	113	2257
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.96	0.86	0.90	0.21	0.46	1.11	0.28	0.51	0.36

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd
HCM Signalized Intersection Capacity Analysis

2022 Existing
Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	45	65	175	30	70	45	2130	295	50	625	65
Future Volume (vph)	80	45	65	175	30	70	45	2130	295	50	625	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	1724		1631	1577	1459	1770	3539	1583	1770	3482	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	1724		1631	1577	1459	1770	3539	1583	1770	3482	
Peak-hour factor, PHF	0.78	0.78	0.78	0.95	0.95	0.95	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	103	58	83	184	32	74	52	2477	343	58	727	76
RTOR Reduction (vph)	0	36	0	0	2	55	0	0	92	0	5	0
Lane Group Flow (vph)	103	105	0	110	111	12	52	2477	251	58	798	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	9.0	9.0		11.0	11.0	24.9	6.7	88.1	99.1	7.9	89.3	
Effective Green, g (s)	9.0	9.0		11.0	11.0	24.9	6.7	88.1	99.1	7.9	89.3	
Actuated g/C Ratio	0.06	0.06		0.08	0.08	0.18	0.05	0.63	0.71	0.06	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	115	110		128	123	259	84	2227	1120	99	2221	
v/s Ratio Prot	0.06	c0.06		0.07	c0.07	0.01	0.03	c0.70	0.16	c0.03	0.23	
v/s Ratio Perm												
v/c Ratio	0.90	0.95		0.86	0.90	0.05	0.62	1.11	0.22	0.59	0.36	
Uniform Delay, d1	65.0	65.3		63.7	64.0	47.7	65.4	26.0	7.1	64.5	11.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	51.4	69.3		38.9	51.5	0.0	9.2	57.5	0.0	5.6	0.5	
Delay (s)	116.5	134.6		102.6	115.5	47.7	74.6	83.5	7.1	70.0	12.4	
Level of Service	F	F		F	F	D	E	F	A	E	B	
Approach Delay (s)		127.0			94.9			74.2			16.2	
Approach LOS		F			F			E			B	
Intersection Summary												
HCM 2000 Control Delay			66.9									
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			84.4%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2022 Existing
Weekday AM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	93	15	17	15	93
Maximum Split (%)	10.7%	66.4%	10.7%	12.1%	10.7%	66.4%
Minimum Split (s)	15	16	15	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	20	35	128	3	20	35
End Time (s)	35	128	3	20	35	128
Yield/Force Off (s)	29	122	137	14	29	122
Yield/Force Off 170(s)	29	122	137	14	29	122
Local Start Time (s)	38	53	6	21	38	53
Local Yield (s)	47	0	15	32	47	0
Local Yield 170(s)	47	0	15	32	47	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 150
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	93 s	15 s	17 s
 Ø5	 Ø6		
15 s	93 s		

6: Route 120 & Evans Dr
HCM 6th TWSC

2022 Existing
Weekday AM

Intersection

Int Delay, s/veh 9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	220	475	2750	1130	75
Future Vol, veh/h	0	220	475	2750	1130	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	89	89	93	93
Heavy Vehicles, %	1	1	2	2	4	4
Mvmt Flow	0	306	534	3090	1215	81

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	3869	648	1296
Stage 1	1256	-	-
Stage 2	2613	-	-
Critical Hdwy	6.82	6.92	4.14
Critical Hdwy Stg 1	5.82	-	-
Critical Hdwy Stg 2	5.82	-	-
Follow-up Hdwy	3.51	3.31	2.22
Pot Cap-1 Maneuver	3	415 ~ 531	-
Stage 1	233	-	-
Stage 2	41	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	0	415 ~ 531	-
Mov Cap-2 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	41	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.3	10.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	~ 531	-	-	415	-	-
HCM Lane V/C Ratio	1.005	-	-	0.736	-	-
HCM Control Delay (s)	68.3	-	0	34.3	-	-
HCM Lane LOS	F	-	A	D	-	-
HCM 95th %tile Q(veh)	14.3	-	-	5.9	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	75	5	5	95	5
Future Vol, veh/h	1	75	5	5	95	5
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	50	50	73	73
Heavy Vehicles, %	2	2	0	0	0	0
Mvmt Flow	1	93	10	10	130	7

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	282	18	0
Stage 1	15	-	-
Stage 2	267	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	708	1061	-
Stage 1	1008	-	-
Stage 2	778	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	651	1058	-
Mov Cap-2 Maneuver	651	-	-
Stage 1	1008	-	-
Stage 2	715	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1049	1609
HCM Lane V/C Ratio	-	-	0.089	0.081
HCM Control Delay (s)	-	-	8.8	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.3

2: Hanover St/Hanover St Ext & Old Etna Rd
HCM 6th TWSC

2022 Existing
Weekday PM

Intersection

Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	3	20	60	3	45
Future Vol, veh/h	30	3	20	60	3	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	59	59	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	37	4	34	102	4	56

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	149	85	0	0	136
Stage 1	85	-	-	-	-
Stage 2	64	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	848	980	-	-	1461
Stage 1	943	-	-	-	-
Stage 2	964	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	845	980	-	-	1461
Mov Cap-2 Maneuver	845	-	-	-	-
Stage 1	943	-	-	-	-
Stage 2	961	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	856	1461
HCM Lane V/C Ratio	-	-	0.047	0.003
HCM Control Delay (s)	-	-	9.4	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2022 Existing
Weekday PM

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	10	1	1	140	340	40
Future Vol, veh/h	10	1	1	140	340	40
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	97	97	75	75
Heavy Vehicles, %	0	0	6	6	3	3
Mvmt Flow	18	2	1	144	453	53

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	627	481	507	0	-	0
Stage 1	481	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.16	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.254	-	-	-
Pot Cap-1 Maneuver	451	589	1038	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	450	588	1037	-	-	-
Mov Cap-2 Maneuver	450	-	-	-	-	-
Stage 1	625	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	13.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1037	-	460	-	-
HCM Lane V/C Ratio	0.001	-	0.043	-	-
HCM Control Delay (s)	8.5	0	13.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

4: Heater Rd & Old Etna Rd
HCM 6th AWSC

2022 Existing
Weekday PM

Intersection

Intersection Delay, s/veh 13.8
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	15	45	125	10	25	25	110	70	15	305	5
Future Vol, veh/h	3	15	45	125	10	25	25	110	70	15	305	5
Peak Hour Factor	0.45	0.45	0.45	0.95	0.95	0.95	0.77	0.77	0.77	0.76	0.76	0.76
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	3	3	3
Mvmt Flow	7	33	100	132	11	26	32	143	91	20	401	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	10.4			11.6			12			17		
HCM LOS	B			B			B			C		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	5%	78%	5%
Vol Thru, %	54%	24%	6%	94%
Vol Right, %	34%	71%	16%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	205	63	160	325
LT Vol	25	3	125	15
Through Vol	110	15	10	305
RT Vol	70	45	25	5
Lane Flow Rate	266	140	168	428
Geometry Grp	1	1	1	1
Degree of Util (X)	0.398	0.221	0.286	0.629
Departure Headway (Hd)	5.375	5.674	6.105	5.292
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	666	629	586	680
Service Time	3.437	3.747	4.175	3.345
HCM Lane V/C Ratio	0.399	0.223	0.287	0.629
HCM Control Delay	12	10.4	11.6	17
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	1.9	0.8	1.2	4.5

5: Route 120 & Old Etna Rd/Etna Rd Queues

2022 Existing
Weekday PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	48	102	154	155	52	16	761	128	57	1886
v/c Ratio	0.44	0.61	0.74	0.78	0.13	0.21	0.36	0.11	0.52	0.82
Control Delay	75.1	39.8	79.6	83.2	4.9	70.7	16.9	0.8	80.2	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.1	39.8	79.6	83.2	4.9	70.7	16.9	0.8	80.2	24.7
Queue Length 50th (ft)	43	29	144	151	0	14	186	0	51	554
Queue Length 95th (ft)	78	76	207	218	17	40	282	10	98	#1098
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	179	231	264	254	406	114	2137	1230	140	2310
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.44	0.58	0.61	0.13	0.14	0.36	0.10	0.41	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd
HCM Signalized Intersection Capacity Analysis

2022 Existing
Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	25	60	250	10	50	15	715	120	55	1790	40
Future Volume (vph)	40	25	60	250	10	50	15	715	120	55	1790	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.99	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	1690		1663	1597	1488	1787	3574	1599	1787	3561	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	1690		1663	1597	1488	1787	3574	1599	1787	3561	
Peak-hour factor, PHF	0.83	0.83	0.83	0.86	0.86	0.86	0.94	0.94	0.94	0.97	0.97	0.97
Adj. Flow (vph)	48	30	72	291	12	58	16	761	128	57	1845	41
RTOR Reduction (vph)	0	65	0	0	1	40	0	0	37	0	1	0
Lane Group Flow (vph)	48	37	0	154	154	12	16	761	91	57	1885	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	8.5	8.5		17.5	17.5	31.0	2.8	82.5	100.0	7.5	87.2	
Effective Green, g (s)	8.5	8.5		17.5	17.5	31.0	2.8	82.5	100.0	7.5	87.2	
Actuated g/C Ratio	0.06	0.06		0.12	0.12	0.22	0.02	0.59	0.71	0.05	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	109	102		207	199	329	35	2106	1142	95	2217	
v/s Ratio Prot	c0.03	0.02		0.09	c0.10	0.01	0.01	0.21	0.06	c0.03	c0.53	
v/s Ratio Perm												
v/c Ratio	0.44	0.36		0.74	0.77	0.03	0.46	0.36	0.08	0.60	0.85	
Uniform Delay, d1	63.5	63.2		59.1	59.3	42.8	67.8	15.0	6.1	64.8	21.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.8		11.9	15.6	0.0	3.4	0.5	0.0	6.6	4.3	
Delay (s)	64.5	64.0		71.0	75.0	42.8	71.3	15.5	6.1	71.4	25.5	
Level of Service	E	E		E	E	D	E	B	A	E	C	
Approach Delay (s)		64.1			68.6			15.1			26.9	
Approach LOS		E			E			B			C	
Intersection Summary												
HCM 2000 Control Delay			29.9									
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			75.1%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2022 Existing
Weekday PM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	77	20	28	17	75
Maximum Split (%)	10.7%	55.0%	14.3%	20.0%	12.1%	53.6%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	36	51	128	8	36	53
End Time (s)	51	128	8	36	53	128
Yield/Force Off (s)	45	122	2	30	47	122
Yield/Force Off 170(s)	45	122	2	30	47	122
Local Start Time (s)	54	69	6	26	54	71
Local Yield (s)	63	0	20	48	65	0
Local Yield 170(s)	63	0	20	48	65	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 110
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	77 s	20 s	28 s
 Ø5	 Ø6		
17 s	75 s		

6: Route 120 & Evans Dr
HCM 6th TWSC

2022 Existing
Weekday PM

Intersection

Int Delay, s/veh 23.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	145	85	1075	2660	15
Future Vol, veh/h	5	145	85	1075	2660	15
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	98	98	93	93
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	6	169	87	1097	2860	16

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	3592	1439	2877
Stage 1	2869	-	-
Stage 2	723	-	-
Critical Hdwy	6.8	6.9	4.14
Critical Hdwy Stg 1	5.8	-	-
Critical Hdwy Stg 2	5.8	-	-
Follow-up Hdwy	3.5	3.3	2.22
Pot Cap-1 Maneuver	~ 4	~ 125	127
Stage 1	30	-	-
Stage 2	447	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	~ 1	~ 125	127
Mov Cap-2 Maneuver	~ 1	-	-
Stage 1	9	-	-
Stage 2	447	-	-

Approach	EB	NB	SB
HCM Control Delay, s	521.9	5.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	127	-	1	125	-	-
HCM Lane V/C Ratio	0.683	-	5.814	1.349	-	-
HCM Control Delay (s)	79.5	\$	7942.6	266	-	-
HCM Lane LOS	F	-	F	F	-	-
HCM 95th %tile Q(veh)	3.7	-	1.8	11.1	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh	7.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	30	0	1	20	1
Future Vol, veh/h	0	30	0	1	20	1
Conflicting Peds, #/hr	0	9	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	25	25	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	45	0	4	31	2

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	66	11	0	0	4
Stage 1	2	-	-	-	-
Stage 2	64	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	944	1076	-	-	1631
Stage 1	1026	-	-	-	-
Stage 2	964	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	926	1067	-	-	1631
Mov Cap-2 Maneuver	926	-	-	-	-
Stage 1	1026	-	-	-	-
Stage 2	946	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	6.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1067	1631
HCM Lane V/C Ratio	-	-	0.042	0.019
HCM Control Delay (s)	-	-	8.5	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

2: Hanover St/Hanover St Ext & Old Etna Rd
HCM 6th TWSC

2022 Existing
Sat MIDDAY

Intersection

Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	15	10	0	15
Future Vol, veh/h	5	0	15	10	0	15
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	72	72	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	8	0	21	14	0	26

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	54	30	0
Stage 1	28	-	-
Stage 2	26	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	959	1050	-
Stage 1	1000	-	-
Stage 2	1002	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	959	1048	-
Mov Cap-2 Maneuver	959	-	-
Stage 1	1000	-	-
Stage 2	1002	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	959	1589
HCM Lane V/C Ratio	-	-	0.008	-
HCM Control Delay (s)	-	-	8.8	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2022 Existing
Sat MIDDAY

Intersection

Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	0	0	60	80	15
Future Vol, veh/h	10	0	0	60	80	15
Conflicting Peds, #/hr	3	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	64	64	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	0	0	94	90	17

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	196	102	107	0	-	0
Stage 1	99	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	797	959	1497	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	797	956	1497	-	-	-
Mov Cap-2 Maneuver	797	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	932	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1497	-	797	-	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	0	-	9.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Intersection Delay, s/veh 7.7
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	10	5	60	2	10	2	50	30	2	70	0
Future Vol, veh/h	0	10	5	60	2	10	2	50	30	2	70	0
Peak Hour Factor	0.60	0.60	0.60	0.82	0.82	0.82	0.74	0.74	0.74	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	17	8	73	2	12	3	68	41	2	80	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	8	7.6	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	83%	3%
Vol Thru, %	61%	67%	3%	97%
Vol Right, %	37%	33%	14%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	15	72	72
LT Vol	2	0	60	2
Through Vol	50	10	2	70
RT Vol	30	5	10	0
Lane Flow Rate	111	25	88	82
Geometry Grp	1	1	1	1
Degree of Util (X)	0.121	0.029	0.106	0.095
Departure Headway (Hd)	3.944	4.214	4.334	4.186
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	894	855	815	843
Service Time	2.032	2.214	2.426	2.276
HCM Lane V/C Ratio	0.124	0.029	0.108	0.097
HCM Control Delay	7.6	7.3	8	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.4	0.3

5: Route 120 & Old Etna Rd/Etna Rd
Queues

2022 Existing
Sat MIDDAY

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	20	27	55	56	25	11	567	89	31	510
v/c Ratio	0.25	0.29	0.51	0.54	0.09	0.15	0.22	0.07	0.35	0.19
Control Delay	71.8	38.7	78.7	78.4	0.6	69.0	9.4	0.7	74.2	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.8	38.7	78.7	78.4	0.6	69.0	9.4	0.7	74.2	7.3
Queue Length 50th (ft)	18	6	51	52	0	10	98	0	28	58
Queue Length 95th (ft)	38	29	96	100	0	32	154	7	62	130
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	215	219	265	256	387	167	2521	1392	216	2636
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.12	0.21	0.22	0.06	0.07	0.22	0.06	0.14	0.19
Intersection Summary										

5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2022 Existing
Sat MIDDAY

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	15	90	5	25	10	510	80	30	480	10
Future Volume (vph)	15	5	15	90	5	25	10	510	80	30	480	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.99	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1778	1664		1615	1550	1445	1805	3610	1615	1787	3562	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1778	1664		1615	1550	1445	1805	3610	1615	1787	3562	
Peak-hour factor, PHF	0.75	0.75	0.75	0.88	0.88	0.88	0.90	0.90	0.90	0.96	0.96	0.96
Adj. Flow (vph)	20	7	20	102	6	28	11	567	89	31	500	10
RTOR Reduction (vph)	0	19	0	0	2	21	0	0	22	0	1	0
Lane Group Flow (vph)	20	8	0	55	54	4	11	567	67	31	509	0
Confl. Peds. (#/hr)							1		1	1		1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	5.3	5.3		9.3	9.3	21.3	2.6	95.4	104.7	6.0	98.8	
Effective Green, g (s)	5.3	5.3		9.3	9.3	21.3	2.6	95.4	104.7	6.0	98.8	
Actuated g/C Ratio	0.04	0.04		0.07	0.07	0.15	0.02	0.68	0.75	0.04	0.71	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	67	62		107	102	219	33	2459	1207	76	2513	
v/s Ratio Prot	c0.01	0.00		0.03	c0.03	0.00	0.01	c0.16	0.04	c0.02	c0.14	
v/s Ratio Perm												
v/c Ratio	0.30	0.13		0.51	0.53	0.02	0.33	0.23	0.06	0.41	0.20	
Uniform Delay, d1	65.5	65.1		63.2	63.2	50.5	67.8	8.4	4.6	65.3	7.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.3		1.7	2.6	0.0	2.2	0.2	0.0	1.3	0.2	
Delay (s)	66.5	65.4		64.9	65.9	50.5	70.0	8.6	4.6	66.6	7.3	
Level of Service	E	E		E	E	D	E	A	A	E	A	
Approach Delay (s)		65.9			62.6			9.1			10.7	
Approach LOS		E			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			16.9									
HCM 2000 Volume to Capacity ratio			0.27									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			42.8%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2022 Existing
Sat MIDDAY

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	19	69	23	29	23	65
Maximum Split (%)	13.6%	49.3%	16.4%	20.7%	16.4%	46.4%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	40	59	128	11	40	63
End Time (s)	59	128	11	40	63	128
Yield/Force Off (s)	53	122	5	34	57	122
Yield/Force Off 170(s)	53	122	5	34	57	122
Local Start Time (s)	58	77	6	29	58	81
Local Yield (s)	71	0	23	52	75	0
Local Yield 170(s)	71	0	23	52	75	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 65
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	69 s	23 s	29 s
 Ø5	 Ø6		
23 s	65 s		

6: Route 120 & Evans Dr
HCM 6th TWSC

2022 Existing
Sat MIDDAY

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	5	30	30	770	765	5
Future Vol, veh/h	5	30	30	770	765	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	96	96	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	6	36	31	802	789	5

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	1255	397	794	0	-	0
Stage 1	792	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.21	-	-	-
Pot Cap-1 Maneuver	166	608	830	-	-	-
Stage 1	412	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	160	608	830	-	-	-
Mov Cap-2 Maneuver	160	-	-	-	-	-
Stage 1	397	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	13.7	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
-----------------------	-----	-----	-------	-------	-----	-----

Capacity (veh/h)	830	-	160	608	-	-
HCM Lane V/C Ratio	0.038	-	0.038	0.059	-	-
HCM Control Delay (s)	9.5	-	28.4	11.3	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection

Int Delay, s/veh	13.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	360	0	1	140	2
Future Vol, veh/h	5	360	0	1	140	2
Conflicting Peds, #/hr	0	53	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	59	59	25	25	67	67
Heavy Vehicles, %	0	0	0	0	4	4
Mvmt Flow	8	610	0	4	209	3

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	433	65	0
Stage 1	12	-	-
Stage 2	421	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	584	1005	-
Stage 1	1016	-	-
Stage 2	667	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	501	945	-
Mov Cap-2 Maneuver	501	-	-
Stage 1	1006	-	-
Stage 2	578	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	7.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	934	1576
HCM Lane V/C Ratio	-	-	0.662	0.133
HCM Control Delay (s)	-	-	16.1	7.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	5.2	0.5

2: Hanover St/Hanover St Ext & Old Etna Rd
HCM 6th TWSC

2022 Existing - no adjustments
Weekday AM

Intersection

Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	0	50	125	1	20
Future Vol, veh/h	90	0	50	125	1	20
Conflicting Peds, #/hr	0	11	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	57	57	84	84	83	83
Heavy Vehicles, %	1	1	0	0	2	2
Mvmt Flow	158	0	60	149	1	24

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	164	149	0	0	212
Stage 1	138	-	-	-	-
Stage 2	26	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.12
Critical Hdwy Stg 1	5.41	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.218
Pot Cap-1 Maneuver	829	900	-	-	1358
Stage 1	891	-	-	-	-
Stage 2	999	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	826	888	-	-	1354
Mov Cap-2 Maneuver	826	-	-	-	-
Stage 1	888	-	-	-	-
Stage 2	998	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	826	1354
HCM Lane V/C Ratio	-	-	0.191	0.001
HCM Control Delay (s)	-	-	10.4	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

3: Heater Rd/Mt Support Rd & Hanover St Ext
HCM 6th TWSC

2022 Existing - no adjustments
Weekday AM

Intersection

Int Delay, s/veh 1.6

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	45	3	1	135	100	20
Future Vol, veh/h	45	3	1	135	100	20
Conflicting Peds, #/hr	0	1	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	86	86	77	77
Heavy Vehicles, %	0	0	5	5	4	4
Mvmt Flow	49	3	1	157	130	26

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	310	152	164	0	-	0
Stage 1	151	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.245	-	-	-
Pot Cap-1 Maneuver	687	900	1396	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	675	892	1385	-	-	-
Mov Cap-2 Maneuver	675	-	-	-	-	-
Stage 1	874	-	-	-	-	-
Stage 2	868	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	10.7	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1385	-	685	-	-
HCM Lane V/C Ratio	0.001	-	0.076	-	-
HCM Control Delay (s)	7.6	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

4: Heater Rd & Old Etna Rd
HCM 6th AWSC

2022 Existing - no adjustments

Weekday AM

Intersection

Intersection Delay, s/veh 9.7
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	50	70	60	40	30	65	95	35	15	85	1
Future Vol, veh/h	2	50	70	60	40	30	65	95	35	15	85	1
Peak Hour Factor	0.69	0.69	0.69	0.90	0.90	0.90	0.83	0.83	0.83	0.66	0.66	0.66
Heavy Vehicles, %	4	4	4	2	2	2	4	4	4	6	6	6
Mvmt Flow	3	72	101	67	44	33	78	114	42	23	129	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.3			9.5			10.3			9.6		
HCM LOS	A			A			B			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	2%	46%	15%
Vol Thru, %	49%	41%	31%	84%
Vol Right, %	18%	57%	23%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	195	122	130	101
LT Vol	65	2	60	15
Through Vol	95	50	40	85
RT Vol	35	70	30	1
Lane Flow Rate	235	177	144	153
Geometry Grp	1	1	1	1
Degree of Util (X)	0.32	0.235	0.204	0.217
Departure Headway (Hd)	4.908	4.78	5.074	5.11
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	726	743	701	695
Service Time	2.987	2.86	3.159	3.197
HCM Lane V/C Ratio	0.324	0.238	0.205	0.22
HCM Control Delay	10.3	9.3	9.5	9.6
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.4	0.9	0.8	0.8

5: Route 120 & Old Etna Rd/Etna Rd
Queues

2022 Existing - no adjustments
Weekday AM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	71	96	74	73	42	35	1692	233	41	546
v/c Ratio	0.68	0.69	0.67	0.67	0.14	0.39	0.72	0.19	0.44	0.23
Control Delay	93.8	61.3	91.5	90.3	4.1	76.4	18.7	0.7	78.5	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.8	61.3	91.5	90.3	4.1	76.4	18.7	0.7	78.5	10.1
Queue Length 50th (ft)	64	48	69	70	0	31	538	0	37	103
Queue Length 95th (ft)	102	90	#133	#137	12	65	595	8	74	130
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	115	149	128	125	292	113	2352	1236	113	2326
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.64	0.58	0.58	0.14	0.31	0.72	0.19	0.36	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd
HCM Signalized Intersection Capacity Analysis

2022 Existing - no adjustments

Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	30	45	115	20	45	30	1455	200	35	425	45
Future Volume (vph)	55	30	45	115	20	45	30	1455	200	35	425	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	1719		1631	1577	1459	1770	3539	1583	1770	3482	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	1719		1631	1577	1459	1770	3539	1583	1770	3482	
Peak-hour factor, PHF	0.78	0.78	0.78	0.95	0.95	0.95	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	71	38	58	121	21	47	35	1692	233	41	494	52
RTOR Reduction (vph)	0	40	0	0	2	35	0	0	64	0	5	0
Lane Group Flow (vph)	71	56	0	74	71	7	35	1692	169	41	541	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	8.3	8.3		9.5	9.5	21.9	6.1	91.8	101.3	6.4	92.1	
Effective Green, g (s)	8.3	8.3		9.5	9.5	21.9	6.1	91.8	101.3	6.4	92.1	
Actuated g/C Ratio	0.06	0.06		0.07	0.07	0.16	0.04	0.66	0.72	0.05	0.66	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	106	101		110	107	228	77	2320	1145	80	2290	
v/s Ratio Prot	c0.04	0.03		c0.05	0.05	0.00	0.02	c0.48	0.11	c0.02	0.16	
v/s Ratio Perm												
v/c Ratio	0.67	0.56		0.67	0.66	0.03	0.45	0.73	0.15	0.51	0.24	
Uniform Delay, d1	64.5	64.1		63.7	63.7	50.0	65.3	15.9	6.0	65.3	9.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.7	3.8		12.0	11.4	0.0	1.5	2.1	0.0	2.3	0.2	
Delay (s)	76.3	67.8		75.7	75.1	50.1	66.9	18.0	6.0	67.6	9.9	
Level of Service	E	E		E	E	D	E	B	A	E	A	
Approach Delay (s)		71.4			69.8			17.4			14.0	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			23.2									
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			63.7%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2022 Existing - no adjustments
Weekday AM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	93	15	17	15	93
Maximum Split (%)	10.7%	66.4%	10.7%	12.1%	10.7%	66.4%
Minimum Split (s)	15	16	15	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	20	35	128	3	20	35
End Time (s)	35	128	3	20	35	128
Yield/Force Off (s)	29	122	137	14	29	122
Yield/Force Off 170(s)	29	122	137	14	29	122
Local Start Time (s)	38	53	6	21	38	53
Local Yield (s)	47	0	15	32	47	0
Local Yield 170(s)	47	0	15	32	47	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 90
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	93 s	15 s	17 s
 Ø5	 Ø6		
15 s	93 s		

Intersection

Int Delay, s/veh 1.8

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	0	150	325	1875	0	50
Future Vol, veh/h	0	150	325	1875	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	89	89	93	93
Heavy Vehicles, %	1	1	2	2	4	4
Mvmt Flow	0	208	365	2107	0	54

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	1811	27	54	0	-	0
Stage 1	27	-	-	-	-	-
Stage 2	1784	-	-	-	-	-
Critical Hdwy	6.82	6.92	4.14	-	-	-
Critical Hdwy Stg 1	5.82	-	-	-	-	-
Critical Hdwy Stg 2	5.82	-	-	-	-	-
Follow-up Hdwy	3.51	3.31	2.22	-	-	-
Pot Cap-1 Maneuver	71	1045	1549	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	121	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	54	1045	1549	-	-	-
Mov Cap-2 Maneuver	54	-	-	-	-	-
Stage 1	760	-	-	-	-	-
Stage 2	121	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	9.3	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	1549	-	-	1045	-	-
HCM Lane V/C Ratio	0.236	-	-	0.199	-	-
HCM Control Delay (s)	8	-	0	9.3	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.9	-	-	0.7	-	-

Intersection

Int Delay, s/veh 7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	55	3	3	70	5
Future Vol, veh/h	1	55	3	3	70	5
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	50	50	73	73
Heavy Vehicles, %	2	2	0	0	0	0
Mvmt Flow	1	68	6	6	96	7

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	208	12	0
Stage 1	9	-	-
Stage 2	199	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	780	1069	-
Stage 1	1014	-	-
Stage 2	835	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	734	1066	-
Mov Cap-2 Maneuver	734	-	-
Stage 1	1014	-	-
Stage 2	786	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	6.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1057	1620
HCM Lane V/C Ratio	-	-	0.065	0.059
HCM Control Delay (s)	-	-	8.6	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2

2: Hanover St/Hanover St Ext & Old Etna Rd
HCM 6th TWSC

2022 Existing - no adjustments
Weekday PM

Intersection

Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	2	15	45	2	35
Future Vol, veh/h	25	2	15	45	2	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	59	59	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	30	2	25	76	3	44

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	113	63	0
Stage 1	63	-	-
Stage 2	50	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	888	1007	-
Stage 1	965	-	-
Stage 2	978	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	886	1007	-
Mov Cap-2 Maneuver	886	-	-
Stage 1	965	-	-
Stage 2	976	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	894	1504
HCM Lane V/C Ratio	-	-	0.037	0.002
HCM Control Delay (s)	-	-	9.2	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

3: Heater Rd/Mt Support Rd & Hanover St Ext
HCM 6th TWSC

2022 Existing - no adjustments
Weekday PM

Intersection

Int Delay, s/veh 0.5

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	10	1	1	105	250	30
Future Vol, veh/h	10	1	1	105	250	30
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	97	97	75	75
Heavy Vehicles, %	0	0	6	6	3	3
Mvmt Flow	18	2	1	108	333	40

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	464	354	374	0	-	0
Stage 1	354	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.16	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.254	-	-	-
Pot Cap-1 Maneuver	560	694	1163	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	558	693	1162	-	-	-
Mov Cap-2 Maneuver	558	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	919	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	11.6	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1162	-	568	-	-
HCM Lane V/C Ratio	0.001	-	0.035	-	-
HCM Control Delay (s)	8.1	0	11.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

4: Heater Rd & Old Etna Rd
HCM 6th AWSC

2022 Existing - no adjustments

Weekday PM

Intersection

Intersection Delay, s/veh 10.1
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	15	30	90	5	20	15	80	55	10	225	3
Future Vol, veh/h	2	15	30	90	5	20	15	80	55	10	225	3
Peak Hour Factor	0.45	0.45	0.45	0.95	0.95	0.95	0.77	0.77	0.77	0.76	0.76	0.76
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	3	3	3
Mvmt Flow	4	33	67	95	5	21	19	104	71	13	296	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	8.8			9.6			9.4			11.2		
HCM LOS	A			A			A			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	4%	78%	4%
Vol Thru, %	53%	32%	4%	95%
Vol Right, %	37%	64%	17%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	47	115	238
LT Vol	15	2	90	10
Through Vol	80	15	5	225
RT Vol	55	30	20	3
Lane Flow Rate	195	104	121	313
Geometry Grp	1	1	1	1
Degree of Util (X)	0.255	0.142	0.179	0.413
Departure Headway (Hd)	4.716	4.89	5.313	4.752
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	754	725	668	752
Service Time	2.79	2.976	3.398	2.818
HCM Lane V/C Ratio	0.259	0.143	0.181	0.416
HCM Control Delay	9.4	8.8	9.6	11.2
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1	0.5	0.6	2

5: Route 120 & Old Etna Rd/Etna Rd
Queues

2022 Existing - no adjustments
Weekday PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	78	116	116	42	11	564	96	41	1402
v/c Ratio	0.37	0.55	0.68	0.70	0.12	0.15	0.25	0.08	0.42	0.58
Control Delay	73.7	38.9	79.3	81.5	3.2	69.2	13.3	0.8	75.8	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.7	38.9	79.3	81.5	3.2	69.2	13.3	0.8	75.8	15.2
Queue Length 50th (ft)	32	21	109	113	0	10	115	0	37	283
Queue Length 95th (ft)	63	64	164	171	9	32	188	8	76	564
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	179	218	261	252	377	114	2257	1265	140	2417
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.36	0.44	0.46	0.11	0.10	0.25	0.08	0.29	0.58
Intersection Summary										

5: Route 120 & Old Etna Rd/Etna Rd
HCM Signalized Intersection Capacity Analysis

2022 Existing - no adjustments

Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	20	45	185	10	40	10	530	90	40	1330	30
Future Volume (vph)	30	20	45	185	10	40	10	530	90	40	1330	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.90		1.00	0.99	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	1694		1663	1598	1488	1787	3574	1599	1787	3561	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	1694		1663	1598	1488	1787	3574	1599	1787	3561	
Peak-hour factor, PHF	0.83	0.83	0.83	0.86	0.86	0.86	0.94	0.94	0.94	0.97	0.97	0.97
Adj. Flow (vph)	36	24	54	215	12	47	11	564	96	41	1371	31
RTOR Reduction (vph)	0	51	0	0	1	34	0	0	26	0	1	0
Lane Group Flow (vph)	36	27	0	116	115	8	11	564	70	41	1401	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	7.6	7.6		14.4	14.4	27.1	2.6	87.3	101.7	6.7	91.4	
Effective Green, g (s)	7.6	7.6		14.4	14.4	27.1	2.6	87.3	101.7	6.7	91.4	
Actuated g/C Ratio	0.05	0.05		0.10	0.10	0.19	0.02	0.62	0.73	0.05	0.65	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	97	91		171	164	288	33	2228	1161	85	2324	
v/s Ratio Prot	c0.02	0.02		0.07	c0.07	0.01	0.01	0.16	0.04	c0.02	c0.39	
v/s Ratio Perm												
v/c Ratio	0.37	0.30		0.68	0.70	0.03	0.33	0.25	0.06	0.48	0.60	
Uniform Delay, d1	63.9	63.6		60.6	60.7	45.8	67.8	11.8	5.5	65.0	13.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.7		8.1	10.5	0.0	2.2	0.3	0.0	1.6	1.2	
Delay (s)	64.8	64.3		68.7	71.3	45.8	70.0	12.1	5.5	66.5	15.1	
Level of Service	E	E		E	E	D	E	B	A	E	B	
Approach Delay (s)		64.4			66.3			12.1			16.5	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			23.0									
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			60.2%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2022 Existing - no adjustments
Weekday PM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	77	20	28	17	75
Maximum Split (%)	10.7%	55.0%	14.3%	20.0%	12.1%	53.6%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	36	51	128	8	36	53
End Time (s)	51	128	8	36	53	128
Yield/Force Off (s)	45	122	2	30	47	122
Yield/Force Off 170(s)	45	122	2	30	47	122
Local Start Time (s)	54	69	6	26	54	71
Local Yield (s)	63	0	20	48	65	0
Local Yield 170(s)	63	0	20	48	65	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 90
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	77 s	20 s	28 s
 Ø5	 Ø6		
17 s	75 s		

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	5	110	65	795	1975	10
Future Vol, veh/h	5	110	65	795	1975	10
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	98	98	93	93
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	6	128	66	811	2124	11

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	2669	1069	2136	0	-	0
Stage 1	2131	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.14	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.22	-	-	-
Pot Cap-1 Maneuver	19	221	250	-	-	-
Stage 1	79	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	14	221	250	-	-	-
Mov Cap-2 Maneuver	14	-	-	-	-	-
Stage 1	58	-	-	-	-	-
Stage 2	554	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	56.5	1.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
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Capacity (veh/h)	250	-	14	221	-	-
HCM Lane V/C Ratio	0.265	-	0.415	0.579	-	-
HCM Control Delay (s)	24.5	-	386.2	41.5	-	-
HCM Lane LOS	C	-	F	E	-	-
HCM 95th %tile Q(veh)	1	-	1.1	3.2	-	-

Intersection

Int Delay, s/veh	7.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	0	1	15	1
Future Vol, veh/h	0	25	0	1	15	1
Conflicting Peds, #/hr	0	9	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	25	25	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	37	0	4	23	2

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	50	11	0
Stage 1	2	-	-
Stage 2	48	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	964	1076	-
Stage 1	1026	-	-
Stage 2	980	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	951	1067	-
Mov Cap-2 Maneuver	951	-	-
Stage 1	1026	-	-
Stage 2	966	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	6.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1067	1631
HCM Lane V/C Ratio	-	-	0.035	0.014
HCM Control Delay (s)	-	-	8.5	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

2: Hanover St/Hanover St Ext & Old Etna Rd
HCM 6th TWSC

2022 Existing - no adjustments

Sat MIDDAY

Intersection

Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	15	10	0	15
Future Vol, veh/h	5	0	15	10	0	15
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	72	72	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	8	0	21	14	0	26

Major/Minor	Minor1	Major1		Major2	
Conflicting Flow All	54	30	0	0	35
Stage 1	28	-	-	-	-
Stage 2	26	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	959	1050	-	-	1589
Stage 1	1000	-	-	-	-
Stage 2	1002	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	959	1048	-	-	1589
Mov Cap-2 Maneuver	959	-	-	-	-
Stage 1	1000	-	-	-	-
Stage 2	1002	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	959	1589
HCM Lane V/C Ratio	-	-	0.008	-
HCM Control Delay (s)	-	-	8.8	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

3: Heater Rd/Mt Support Rd & Hanover St Ext
HCM 6th TWSC

2022 Existing - no adjustments

Sat MIDDAY

Intersection

Int Delay, s/veh 0.7

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	10	0	0	50	65	10
Future Vol, veh/h	10	0	0	50	65	10
Conflicting Peds, #/hr	3	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	64	64	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	0	0	78	73	11

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	160	82	84	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	836	983	1526	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	836	980	1526	-	-	-
Mov Cap-2 Maneuver	836	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	947	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1526	-	836	-	-
HCM Lane V/C Ratio	-	-	0.016	-	-
HCM Control Delay (s)	0	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

4: Heater Rd & Old Etna Rd
HCM 6th AWSC

2022 Existing - no adjustments

Sat MIDDAY

Intersection

Intersection Delay, s/veh 7.6
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	10	3	50	2	10	2	45	25	2	60	0
Future Vol, veh/h	0	10	3	50	2	10	2	45	25	2	60	0
Peak Hour Factor	0.60	0.60	0.60	0.82	0.82	0.82	0.74	0.74	0.74	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	17	5	61	2	12	3	61	34	2	68	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.8	7.5	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	81%	3%
Vol Thru, %	62%	77%	3%	97%
Vol Right, %	35%	23%	16%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	13	62	62
LT Vol	2	0	50	2
Through Vol	45	10	2	60
RT Vol	25	3	10	0
Lane Flow Rate	97	22	76	70
Geometry Grp	1	1	1	1
Degree of Util (X)	0.106	0.025	0.09	0.081
Departure Headway (Hd)	3.919	4.11	4.27	4.149
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	903	856	829	853
Service Time	1.992	2.205	2.348	2.224
HCM Lane V/C Ratio	0.107	0.026	0.092	0.082
HCM Control Delay	7.5	7.3	7.8	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.3	0.3

5: Route 120 & Old Etna Rd/Etna Rd
Queues

2022 Existing - no adjustments

Sat MIDDAY

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	13	20	45	45	21	6	472	72	26	427
v/c Ratio	0.18	0.24	0.46	0.48	0.08	0.09	0.18	0.05	0.31	0.15
Control Delay	69.7	43.5	77.6	77.6	0.6	67.6	7.8	0.7	73.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.7	43.5	77.6	77.6	0.6	67.6	7.8	0.7	73.2	5.2
Queue Length 50th (ft)	12	6	42	43	0	5	76	0	23	45
Queue Length 95th (ft)	29	27	84	86	0	21	120	6	56	101
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	215	216	265	254	379	167	2620	1445	216	2787
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.09	0.17	0.18	0.06	0.04	0.18	0.05	0.12	0.15
Intersection Summary										

5: Route 120 & Old Etna Rd/Etna Rd
HCM Signalized Intersection Capacity Analysis

2022 Existing - no adjustments

Sat MIDDAY

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	5	10	75	3	20	5	425	65	25	400	10
Future Volume (vph)	10	5	10	75	3	20	5	425	65	25	400	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.90		1.00	0.99	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1778	1689		1615	1549	1445	1805	3610	1615	1787	3560	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1778	1689		1615	1549	1445	1805	3610	1615	1787	3560	
Peak-hour factor, PHF	0.75	0.75	0.75	0.88	0.88	0.88	0.90	0.90	0.90	0.96	0.96	0.96
Adj. Flow (vph)	13	7	13	85	3	23	6	472	72	26	417	10
RTOR Reduction (vph)	0	13	0	0	1	18	0	0	17	0	1	0
Lane Group Flow (vph)	13	7	0	45	44	3	6	472	55	26	426	0
Confl. Peds. (#/hr)							1		1	1		1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	3.8	3.8		8.5	8.5	20.2	1.2	98.0	106.5	5.7	102.5	
Effective Green, g (s)	3.8	3.8		8.5	8.5	20.2	1.2	98.0	106.5	5.7	102.5	
Actuated g/C Ratio	0.03	0.03		0.06	0.06	0.14	0.01	0.70	0.76	0.04	0.73	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	48	45		98	94	208	15	2527	1228	72	2606	
v/s Ratio Prot	c0.01	0.00		0.03	c0.03	0.00	0.00	c0.13	0.03	c0.01	c0.12	
v/s Ratio Perm												
v/c Ratio	0.27	0.16		0.46	0.47	0.01	0.40	0.19	0.04	0.36	0.16	
Uniform Delay, d1	66.7	66.5		63.5	63.6	51.4	69.0	7.2	4.1	65.4	5.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.6		1.2	1.3	0.0	6.3	0.2	0.0	1.1	0.1	
Delay (s)	67.9	67.2		64.8	64.9	51.4	75.3	7.4	4.2	66.5	5.8	
Level of Service	E	E		E	E	D	E	A	A	E	A	
Approach Delay (s)		67.4			62.3			7.7			9.3	
Approach LOS		E			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			15.4									
HCM 2000 Volume to Capacity ratio			0.22									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			39.8%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2022 Existing - no adjustments

Sat MIDDAY

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	19	69	23	29	23	65
Maximum Split (%)	13.6%	49.3%	16.4%	20.7%	16.4%	46.4%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	40	59	128	11	40	63
End Time (s)	59	128	11	40	63	128
Yield/Force Off (s)	53	122	5	34	57	122
Yield/Force Off 170(s)	53	122	5	34	57	122
Local Start Time (s)	58	77	6	29	58	81
Local Yield (s)	71	0	23	52	75	0
Local Yield 170(s)	71	0	23	52	75	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 65
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	69 s	23 s	29 s
 Ø5	 Ø6		
23 s	65 s		

6: Route 120 & Evans Dr
HCM 6th TWSC

2022 Existing - no adjustments

Sat MIDDAY

Intersection

Int Delay, s/veh 0.4

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	3	25	25	640	635	5
Future Vol, veh/h	3	25	25	640	635	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	96	96	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	4	30	26	667	655	5

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	1044	330	660	0	-	0
Stage 1	658	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.21	-	-	-
Pot Cap-1 Maneuver	228	672	931	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	222	672	931	-	-	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	469	-	-	-	-	-
Stage 2	662	-	-	-	-	-

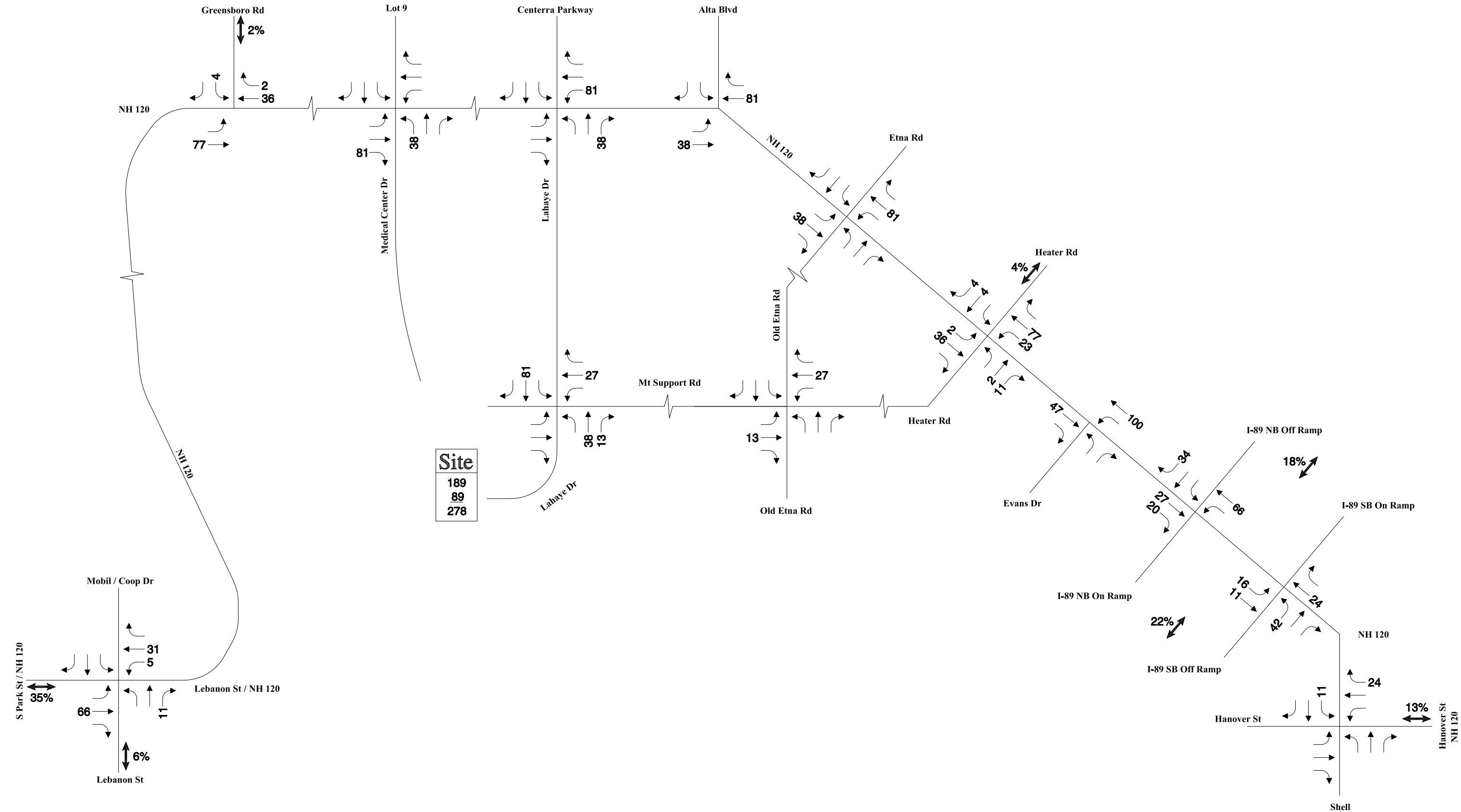
Approach EB NB SB

HCM Control Delay, s	11.8	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	931	-	222	672	-	-
HCM Lane V/C Ratio	0.028	-	0.016	0.045	-	-
HCM Control Delay (s)	9	-	21.5	10.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.1	-	-

Background Developments

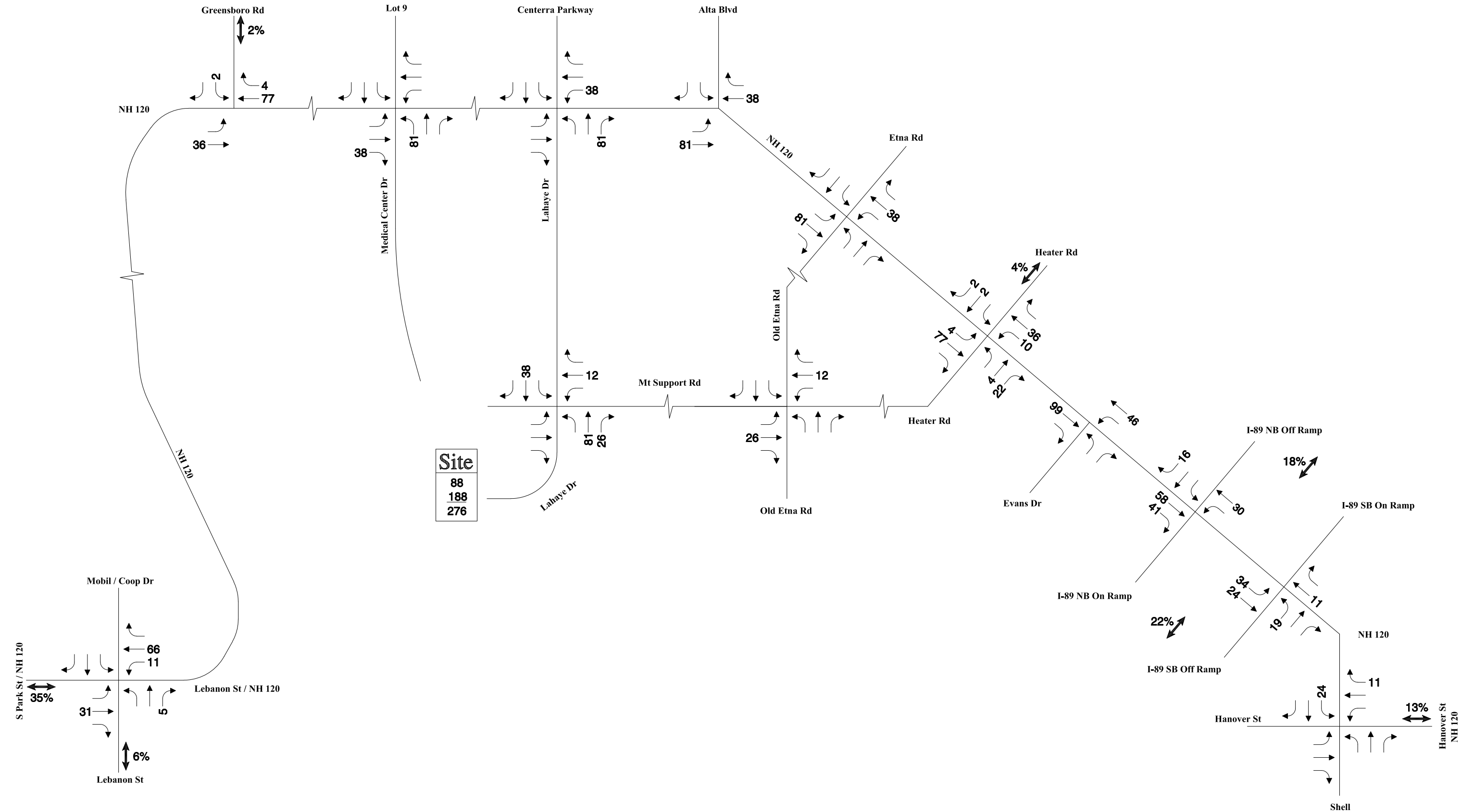


Not to Scale



Site Generated
Weekday Morning
Peak Hour Traffic Volumes
DHMC Patient Care Tower Expansion

Figure 8



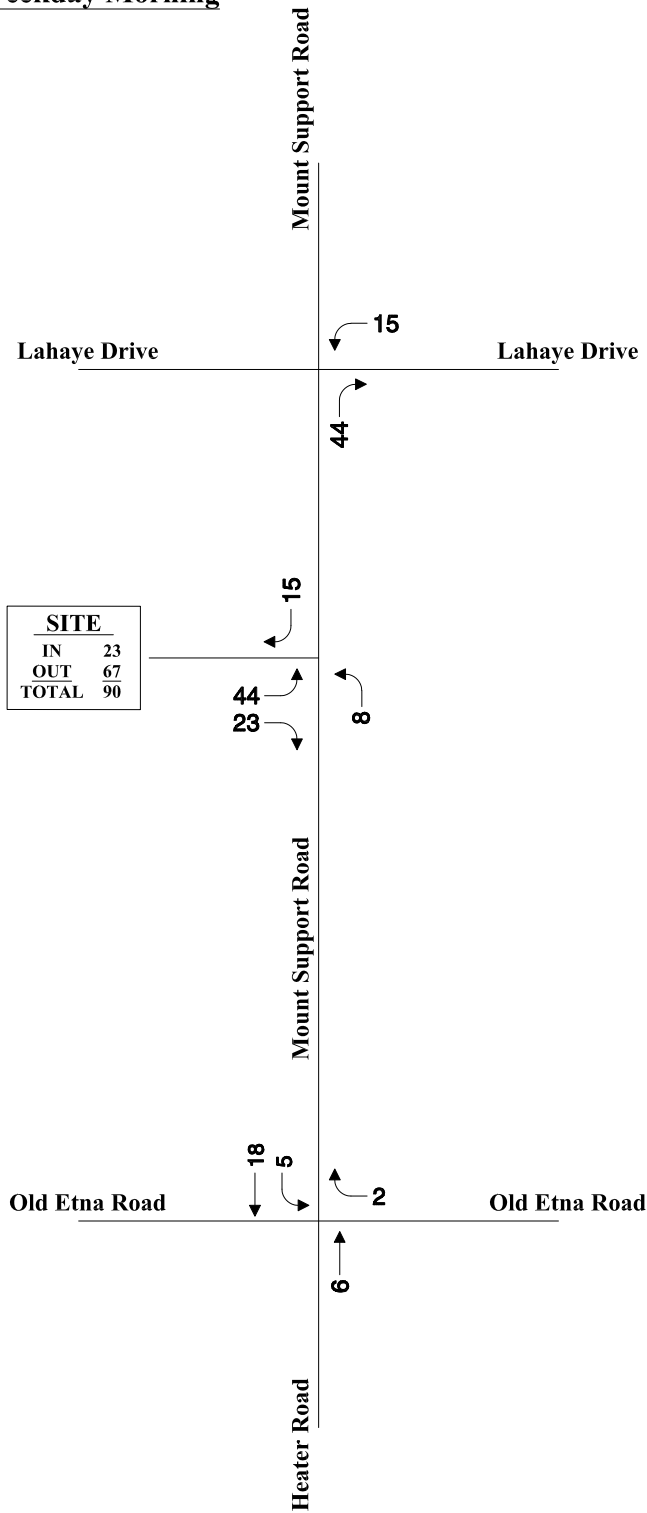
Not to Scale



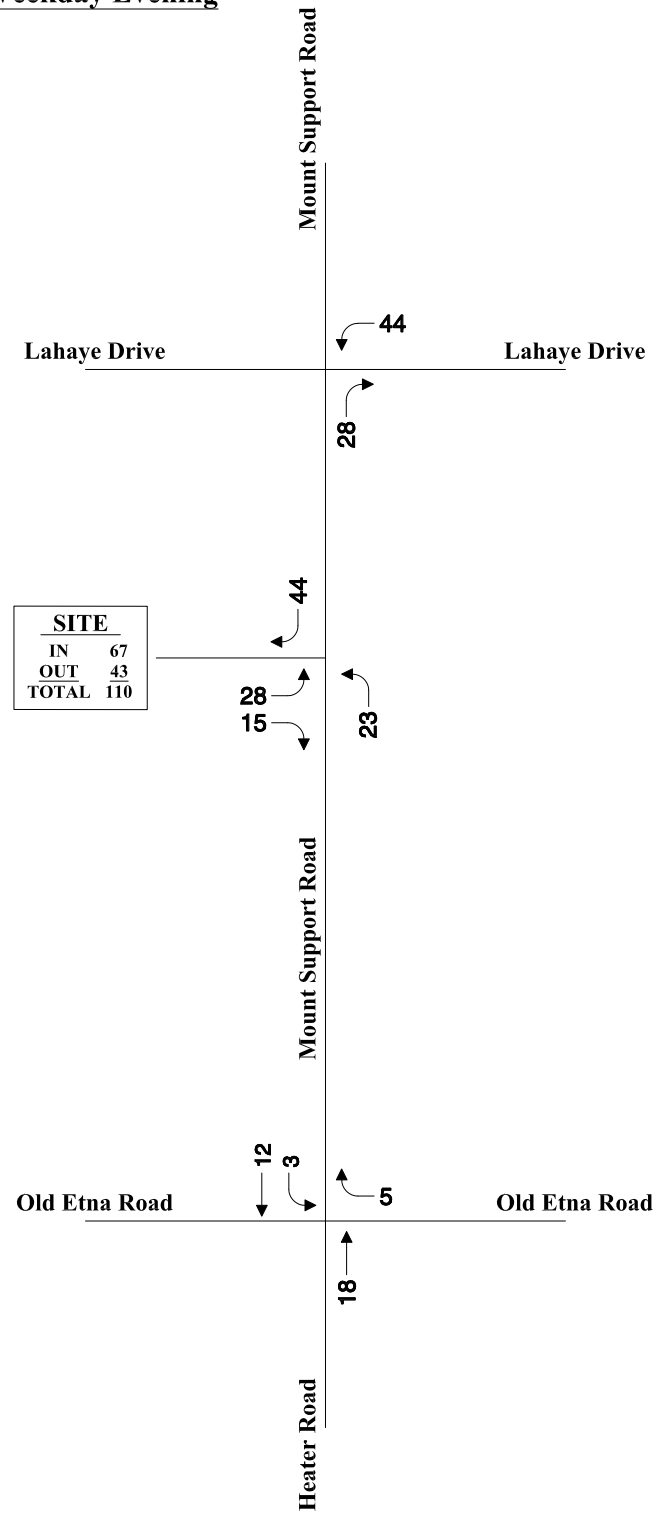
Site Generated
Weekday Evening
Peak Hour Traffic Volumes
DHMC Patient Care Tower Expansion

Figure 9

Weekday Morning



Weekday Evening



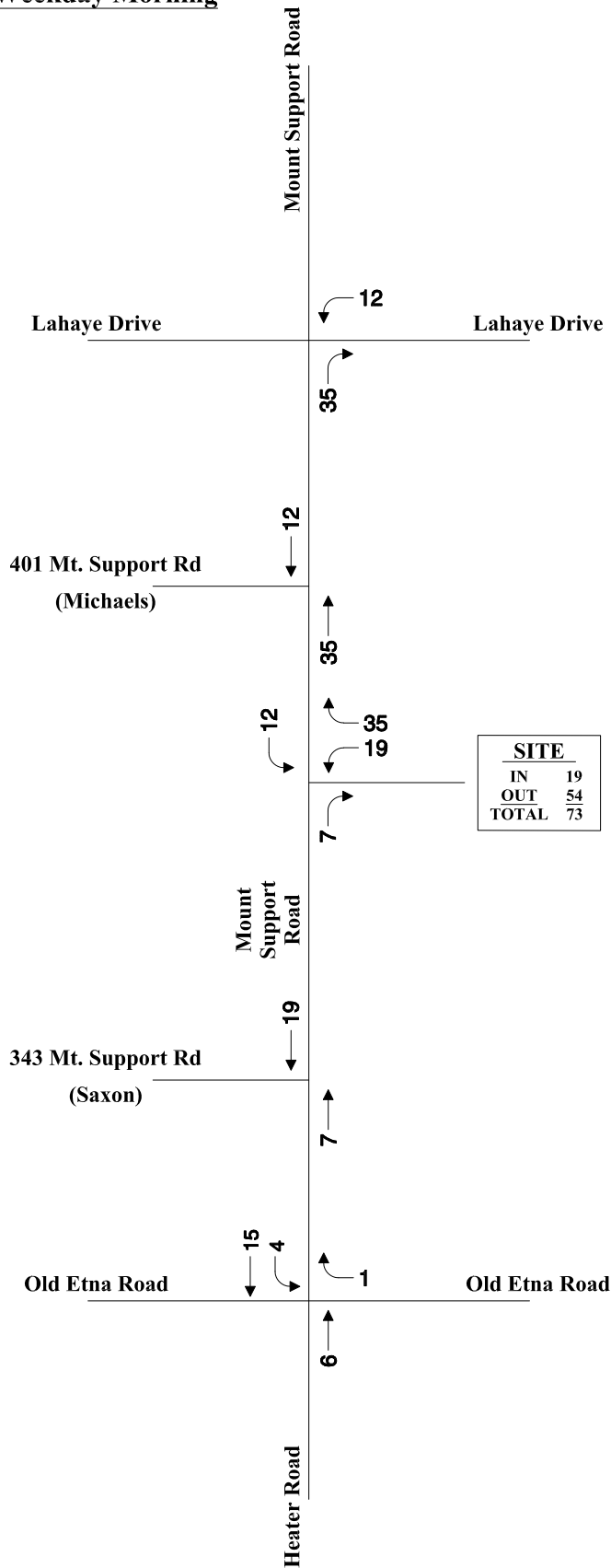
Not to Scale



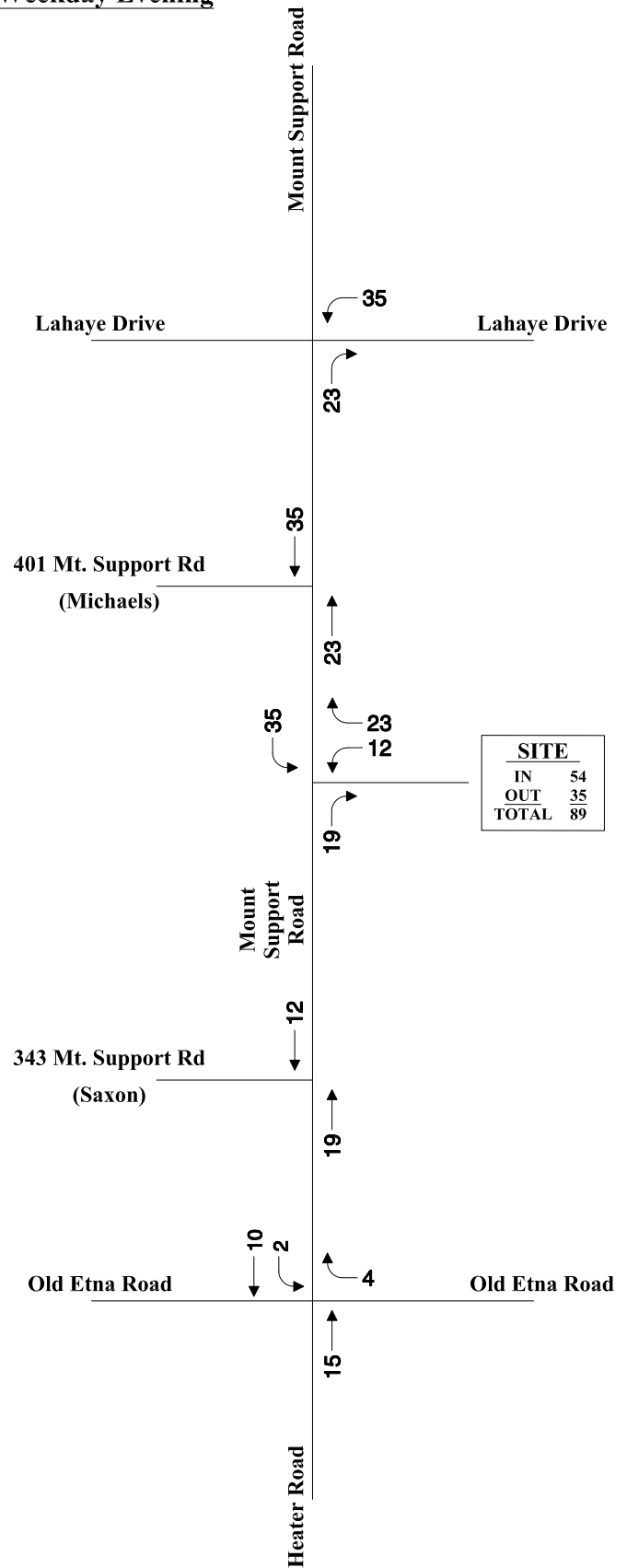
Site Generated
Peak Hour Traffic Volumes

Figure A-1

Weekday Morning



Weekday Evening



Not to Scale



Site Generated
Peak Hour Traffic Volumes

Figure A-1

Trip-Generation and Distribution Calculations

ITE TRIP GENERATION WORKSHEET
(11th Edition, Updated 2021)

LANDUSE: Multifamily Housing (Mid-Rise) - Not Close to Rail Transit: 4-10 stories
LANDUSE CODE: 221 Independent Variable --- Number of Dwelling Units
SETTING/LOCATION: General Urban/Suburban
JOB NAME: 474 dwelling units
JOB NUMBER:

WEEKDAY

RATES:		# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
				Average	Low	High	Average	Low	High	Enter	Exit
	DAILY	11	0.93	4.54	3.76	5.40	201	60	330	50%	50%
	AM PEAK OF GENERATOR	23	0.89	0.35	0.13	0.53	226	21	1,168	26%	74%
	PM PEAK OF GENERATOR	22	0.93	0.39	0.19	0.60	221	21	1,168	60%	40%
	AM PEAK (ADJACENT ST)	30	0.91	0.37	0.15	0.53	173	26	490	23%	77%
	PM PEAK (ADJACENT ST)	31	0.91	0.39	0.19	0.57	169	26	490	61%	39%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	2,152	1,076	1,076	2,216	1,108	1,108
	AM PEAK OF GENERATOR	166	43	123	158	41	117
	PM PEAK OF GENERATOR	185	111	74	167	100	67
	AM PEAK (ADJACENT ST)	175	40	135	197	45	152
	PM PEAK (ADJACENT ST)	185	113	72	185	113	72

SATURDAY

RATES:		# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
				Average	Low	High	Average	Low	High	Enter	Exit
	DAILY	5	0.91	4.57	4.03	5.31	250	140	330	50%	50%
	PEAK OF GENERATOR	5	0.92	0.39	0.34	0.43	250	140	330	51%	49%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	2,168	1,084	1,084	2,064	1,032	1,032
	PEAK OF GENERATOR	185	94	91	191	97	93

SUNDAY

RATES:		# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
				Average	Low	High	Average	Low	High	Enter	Exit
	DAILY	5	0.85	3.77	3.06	4.24	250	140	330	50%	50%
	PEAK OF GENERATOR	5	0.79	0.32	0.26	0.42	250	140	330	55%	45%

TRIPS:		BY AVERAGE			BY REGRESSION		
		Total	Enter	Exit	Total	Enter	Exit
	DAILY	1,788	894	894	1,672	836	836
	PEAK OF GENERATOR	152	83	68	135	74	61

Table 3. Residence MCD/County to Workplace MCD/County Commuting Flows for the United States and Puerto Rico
Sorted by Residence Geography: 5-Year ACS, 2011-2015

Universe: Workers 16 years and over.

Commuting flows are sorted by residence state, residence county, and residence minor civil division.

Place of Residency: Lebanon, NH - Grafton County

Place of Work		Commuting Flow	Travel Route Factors				Travel Route by # of Commuters				Travel Route by % of Commuters			
State Name	Minor Civil Division Name	Workers in Commuting Flow	I-89 North	I-89 South	NH 120 North	NH 120 South	I-89 North	I-89 South	NH 120 North	NH 120 South	I-89 North	I-89 South	NH 120 North	NH 120 South
MA	Cambridge city	14		1			0	14	0	0	0%	0%	0%	0%
MA	Boston city	21		1			0	21	0	0	0%	0%	0%	0%
NH	Walpole town	17	1				17	0	0	0	0%	0%	0%	0%
NH	Bath town	16			1		0	0	16	0	0%	0%	0%	0%
NH	Bethlehem town	14			1		0	0	14	0	0%	0%	0%	0%
NH	Canaan town	75		1			0	75	0	0	0%	1%	0%	0%
NH	Enfield town	80		1			0	80	0	0	0%	1%	0%	0%
NH	Franconia town	18			1		0	0	18	0	0%	0%	0%	0%
NH	Hanover town	1,220			1		0	0	1,220	0	0%	0%	17%	0%
NH	Lebanon city	4,212	0.1	0.25	0.6	0.05	421	1,053	2,527	211	6%	15%	35%	3%
NH	Littleton town	87			1		0	0	87	0	0%	0%	1%	0%
NH	Lyme town	69			1		0	0	69	0	0%	0%	1%	0%
NH	Piermont town	26			1		0	0	26	0	0%	0%	0%	0%
NH	Plymouth town	89		1			0	89	0	0	0%	1%	0%	0%
NH	Nashua city	14		1			0	14	0	0	0%	0%	0%	0%
NH	Concord city	31		1			0	31	0	0	0%	0%	0%	0%
NH	New London town	53		1			0	53	0	0	0%	1%	0%	0%
NH	Claremont city	78	1				78	0	0	0	1%	0%	0%	0%
NH	Cornish town	18			1		0	0	18	0	0%	0%	0%	0%
NH	Newport town	56		1			0	56	0	0	0%	1%	0%	0%
NH	Plainfield town	79				1	0	0	0	79	0%	0%	0%	1%
VT	Williston town	13	1				13	0	0	0	0%	0%	0%	0%
VT	Fairlee town	14			1		0	0	14	0	0%	0%	0%	0%
VT	Newbury town	16			1		0	0	16	0	0%	0%	0%	0%
VT	Thetford town	18			1		0	0	18	0	0%	0%	0%	0%
VT	Killington town	13	1				13	0	0	0	0%	0%	0%	0%
VT	Rutland city	15	1				15	0	0	0	0%	0%	0%	0%
VT	Montpelier city	45	1				45	0	0	0	1%	0%	0%	0%
VT	Grafton town	13	1				13	0	0	0	0%	0%	0%	0%
VT	Bethel town	13	1				13	0	0	0	0%	0%	0%	0%
VT	Hartford town	380	1				380	0	0	0	5%	0%	0%	0%
VT	Ludlow town	28	1				28	0	0	0	0%	0%	0%	0%
VT	Norwich town	62			1		0	0	62	0	0%	0%	1%	0%
VT	Plymouth town	31	1				31	0	0	0	0%	0%	0%	0%
VT	Royalton town	57	1				57	0	0	0	1%	0%	0%	0%
VT	Sharon town	14	1				14	0	0	0	0%	0%	0%	0%
VT	Springfield town	20	1				20	0	0	0	0%	0%	0%	0%
VT	Windsor town	70	1				70	0	0	0	1%	0%	0%	0%
VT	Woodstock town	18	1				18	0	0	0	0%	0%	0%	0%
		7,127					1,246	1,486	4,105	290	17%	21%	58%	4%
							Rounded:				15%	20%	60%	5%

Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Flows are presented for MCDs for the 12 "strong MCD states" (CT, ME, MA, NH, RI, VT, MI, WI, NJ, NY, MN, and PA), and at the county level for all other states.

Source: U.S. Census Bureau, 2011-2015 American Community Survey.

No-Build and Build Intersection Analysis Worksheets

Intersection

Int Delay, s/veh	35.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	530	0	1	210	3
Future Vol, veh/h	5	530	0	1	210	3
Conflicting Peds, #/hr	0	53	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	59	59	25	25	67	67
Heavy Vehicles, %	0	0	0	0	4	4
Mvmt Flow	8	898	0	4	313	4

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	642	65	0
Stage 1	12	-	-
Stage 2	630	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	442	1005	-
Stage 1	1016	-	-
Stage 2	535	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	351	945	-
Mov Cap-2 Maneuver	351	-	-
Stage 1	1006	-	-
Stage 2	429	-	-

Approach	WB	NB	SB
HCM Control Delay, s	44.8	0	7.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	930	1576
HCM Lane V/C Ratio	-	-	0.975	0.199
HCM Control Delay (s)	-	-	44.8	7.8
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	17	0.7

Intersection

Int Delay, s/veh	4.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	0	75	185	1	30
Future Vol, veh/h	130	0	75	185	1	30
Conflicting Peds, #/hr	0	11	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	57	57	84	84	83	83
Heavy Vehicles, %	1	1	0	0	2	2
Mvmt Flow	228	0	89	220	1	36

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	240	213	0
Stage 1	202	-	-
Stage 2	38	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	750	830	-
Stage 1	834	-	-
Stage 2	987	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	747	819	-
Mov Cap-2 Maneuver	747	-	-
Stage 1	831	-	-
Stage 2	986	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	747	1244
HCM Lane V/C Ratio	-	-	0.305	0.001
HCM Control Delay (s)	-	-	11.9	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1.3	0

3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2025 No-Build
Weekday AM

Intersection

Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	65	5	1	235	200	25
Future Vol, veh/h	65	5	1	235	200	25
Conflicting Peds, #/hr	0	1	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	86	86	77	77
Heavy Vehicles, %	0	0	5	5	4	4
Mvmt Flow	71	5	1	273	260	32

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	559	285	300	0	-	0
Stage 1	284	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.245	-	-	-
Pot Cap-1 Maneuver	494	759	1244	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	486	752	1235	-	-	-
Mov Cap-2 Maneuver	486	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	770	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1235	-	499	-	-
HCM Lane V/C Ratio	0.001	-	0.152	-	-
HCM Control Delay (s)	7.9	0	13.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection

Intersection Delay, s/veh 17.4
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	75	100	85	60	50	95	180	50	30	170	1
Future Vol, veh/h	3	75	100	85	60	50	95	180	50	30	170	1
Peak Hour Factor	0.69	0.69	0.69	0.90	0.90	0.90	0.83	0.83	0.83	0.66	0.66	0.66
Heavy Vehicles, %	4	4	4	2	2	2	4	4	4	6	6	6
Mvmt Flow	4	109	145	94	67	56	114	217	60	45	258	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	14.8			14.3			21.2			17.1		
HCM LOS	B			B			C			C		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	2%	44%	15%
Vol Thru, %	55%	42%	31%	85%
Vol Right, %	15%	56%	26%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	325	178	195	201
LT Vol	95	3	85	30
Through Vol	180	75	60	170
RT Vol	50	100	50	1
Lane Flow Rate	392	258	217	305
Geometry Grp	1	1	1	1
Degree of Util (X)	0.673	0.458	0.404	0.546
Departure Headway (Hd)	6.189	6.385	6.712	6.457
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	583	562	533	557
Service Time	4.254	4.456	4.788	4.527
HCM Lane V/C Ratio	0.672	0.459	0.407	0.548
HCM Control Delay	21.2	14.8	14.3	17.1
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	5.1	2.4	1.9	3.3

5: Route 120 & Old Etna Rd/Etna Rd Queues

2025 No-Build
Weekday AM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	103	148	110	113	67	52	2645	349	58	872
v/c Ratio	0.90	0.99	0.87	0.90	0.21	0.54	1.19	0.29	0.59	0.39
Control Delay	123.5	115.4	112.8	120.8	11.4	84.0	115.5	1.2	87.2	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	123.5	115.4	112.8	120.8	11.4	84.0	115.5	1.2	87.2	12.6
Queue Length 50th (ft)	95	98	106	112	0	47	~1536	5	52	193
Queue Length 95th (ft)	#169	#186	#224	#247	43	88	#1535	15	97	224
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	115	150	128	125	315	113	2228	1208	113	2257
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.99	0.86	0.90	0.21	0.46	1.19	0.29	0.51	0.39

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd
HCM Signalized Intersection Capacity Analysis

2025 No-Build
Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	45	70	175	30	70	45	2275	300	50	680	70
Future Volume (vph)	80	45	70	175	30	70	45	2275	300	50	680	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	1718		1631	1577	1459	1770	3539	1583	1770	3483	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	1718		1631	1577	1459	1770	3539	1583	1770	3483	
Peak-hour factor, PHF	0.78	0.78	0.78	0.95	0.95	0.95	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	103	58	90	184	32	74	52	2645	349	58	791	81
RTOR Reduction (vph)	0	40	0	0	2	55	0	0	88	0	5	0
Lane Group Flow (vph)	103	108	0	110	111	12	52	2645	261	58	867	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	9.0	9.0		11.0	11.0	24.9	6.7	88.1	99.1	7.9	89.3	
Effective Green, g (s)	9.0	9.0		11.0	11.0	24.9	6.7	88.1	99.1	7.9	89.3	
Actuated g/C Ratio	0.06	0.06		0.08	0.08	0.18	0.05	0.63	0.71	0.06	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	115	110		128	123	259	84	2227	1120	99	2221	
v/s Ratio Prot	0.06	c0.06		0.07	c0.07	0.01	0.03	c0.75	0.16	c0.03	0.25	
v/s Ratio Perm												
v/c Ratio	0.90	0.98		0.86	0.90	0.05	0.62	1.19	0.23	0.59	0.39	
Uniform Delay, d1	65.0	65.4		63.7	64.0	47.7	65.4	26.0	7.2	64.5	12.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	51.4	78.2		38.9	51.5	0.0	9.2	89.3	0.0	5.6	0.5	
Delay (s)	116.5	143.6		102.6	115.5	47.7	74.6	115.3	7.2	70.0	12.7	
Level of Service	F	F		F	F	D	E	F	A	E	B	
Approach Delay (s)		132.4			94.9			102.2			16.3	
Approach LOS		F			F			F			B	
Intersection Summary												
HCM 2000 Control Delay			85.7									
HCM 2000 Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			88.7%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2025 No-Build
Weekday AM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	93	15	17	15	93
Maximum Split (%)	10.7%	66.4%	10.7%	12.1%	10.7%	66.4%
Minimum Split (s)	15	16	15	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	20	35	128	3	20	35
End Time (s)	35	128	3	20	35	128
Yield/Force Off (s)	29	122	137	14	29	122
Yield/Force Off 170(s)	29	122	137	14	29	122
Local Start Time (s)	38	53	6	21	38	53
Local Yield (s)	47	0	15	32	47	0
Local Yield 170(s)	47	0	15	32	47	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 150
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	93 s	15 s	17 s
 Ø5	 Ø6		
15 s	93 s		

Intersection

Int Delay, s/veh 12.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	0	225	490	2935	1210	75
Future Vol, veh/h	0	225	490	2935	1210	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	89	89	93	93
Heavy Vehicles, %	1	1	2	2	4	4
Mvmt Flow	0	313	551	3298	1301	81

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	4093	691	1382	0	-	0
Stage 1	1342	-	-	-	-	-
Stage 2	2751	-	-	-	-	-
Critical Hdwy	6.82	6.92	4.14	-	-	-
Critical Hdwy Stg 1	5.82	-	-	-	-	-
Critical Hdwy Stg 2	5.82	-	-	-	-	-
Follow-up Hdwy	3.51	3.31	2.22	-	-	-
Pot Cap-1 Maneuver	2	389	~ 492	-	-	-
Stage 1	210	-	-	-	-	-
Stage 2	35	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	389	~ 492	-	-	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	35	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	42.8	15.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
-----------------------	-----	-----	-------	-------	-----	-----

Capacity (veh/h)	~ 492	-	-	389	-	-
HCM Lane V/C Ratio	1.119	-	-	0.803	-	-
HCM Control Delay (s)	105.4	-	0	42.8	-	-
HCM Lane LOS	F	-	A	E	-	-
HCM 95th %tile Q(veh)	18.5	-	-	7.1	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 7.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	75	5	5	95	5
Future Vol, veh/h	1	75	5	5	95	5
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	50	50	73	73
Heavy Vehicles, %	2	2	0	0	0	0
Mvmt Flow	1	93	10	10	130	7

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	282	18	0
Stage 1	15	-	-
Stage 2	267	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	708	1061	-
Stage 1	1008	-	-
Stage 2	778	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	651	1058	-
Mov Cap-2 Maneuver	651	-	-
Stage 1	1008	-	-
Stage 2	715	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1049	1609
HCM Lane V/C Ratio	-	-	0.089	0.081
HCM Control Delay (s)	-	-	8.8	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.3

Intersection

Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	3	20	60	3	45
Future Vol, veh/h	30	3	20	60	3	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	59	59	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	37	4	34	102	4	56

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	149	85	0
Stage 1	85	-	-
Stage 2	64	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	848	980	-
Stage 1	943	-	-
Stage 2	964	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	845	980	-
Mov Cap-2 Maneuver	845	-	-
Stage 1	943	-	-
Stage 2	961	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	856	1461
HCM Lane V/C Ratio	-	-	0.047	0.003
HCM Control Delay (s)	-	-	9.4	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2025 No-Build
Weekday PM

Intersection

Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	1	1	195	390	40
Future Vol, veh/h	10	1	1	195	390	40
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	97	97	75	75
Heavy Vehicles, %	0	0	6	6	3	3
Mvmt Flow	18	2	1	201	520	53

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	751	548	574	0	-	0
Stage 1	548	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.16	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.254	-	-	-
Pot Cap-1 Maneuver	381	540	979	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	380	539	978	-	-	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	582	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	978	-	390	-	-
HCM Lane V/C Ratio	0.001	-	0.05	-	-
HCM Control Delay (s)	8.7	0	14.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Intersection Delay, s/veh 18
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	15	45	125	10	35	25	155	70	20	350	5
Future Vol, veh/h	3	15	45	125	10	35	25	155	70	20	350	5
Peak Hour Factor	0.45	0.45	0.45	0.95	0.95	0.95	0.77	0.77	0.77	0.76	0.76	0.76
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	3	3	3
Mvmt Flow	7	33	100	132	11	37	32	201	91	26	461	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	11.3			12.8			14.8			23.8		
HCM LOS	B			B			B			C		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	5%	74%	5%
Vol Thru, %	62%	24%	6%	93%
Vol Right, %	28%	71%	21%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	63	170	375
LT Vol	25	3	125	20
Through Vol	155	15	10	350
RT Vol	70	45	35	5
Lane Flow Rate	325	140	179	493
Geometry Grp	1	1	1	1
Degree of Util (X)	0.519	0.243	0.327	0.755
Departure Headway (Hd)	5.755	6.247	6.588	5.618
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	630	575	548	646
Service Time	3.755	4.273	4.614	3.618
HCM Lane V/C Ratio	0.516	0.243	0.327	0.763
HCM Control Delay	14.8	11.3	12.8	23.8
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	3	0.9	1.4	6.9

5: Route 120 & Old Etna Rd/Etna Rd Queues

2025 No-Build
Weekday PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	54	102	160	160	58	16	824	133	62	2026
v/c Ratio	0.48	0.60	0.76	0.79	0.15	0.21	0.40	0.11	0.55	0.88
Control Delay	76.7	38.9	80.7	84.1	6.6	70.7	18.4	0.9	81.5	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.7	38.9	80.7	84.1	6.6	70.7	18.4	0.9	81.5	28.4
Queue Length 50th (ft)	48	29	149	156	0	14	211	0	56	665
Queue Length 95th (ft)	84	76	215	225	24	40	310	10	105	#1237
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	179	231	264	254	407	114	2059	1210	140	2296
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.44	0.61	0.63	0.14	0.14	0.40	0.11	0.44	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 No-Build
Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	25	60	260	10	55	15	775	125	60	1925	40
Future Volume (vph)	45	25	60	260	10	55	15	775	125	60	1925	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.99	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	1690		1663	1597	1488	1787	3574	1599	1787	3562	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	1690		1663	1597	1488	1787	3574	1599	1787	3562	
Peak-hour factor, PHF	0.83	0.83	0.83	0.86	0.86	0.86	0.94	0.94	0.94	0.97	0.97	0.97
Adj. Flow (vph)	54	30	72	302	12	64	16	824	133	62	1985	41
RTOR Reduction (vph)	0	65	0	0	1	44	0	0	39	0	1	0
Lane Group Flow (vph)	54	37	0	160	159	14	16	824	94	62	2025	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	8.7	8.7		17.8	17.8	32.6	2.8	80.7	98.5	8.8	86.7	
Effective Green, g (s)	8.7	8.7		17.8	17.8	32.6	2.8	80.7	98.5	8.8	86.7	
Actuated g/C Ratio	0.06	0.06		0.13	0.13	0.23	0.02	0.58	0.70	0.06	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	111	105		211	203	346	35	2060	1125	112	2205	
v/s Ratio Prot	c0.03	0.02		0.10	c0.10	0.01	0.01	0.23	0.06	c0.03	c0.57	
v/s Ratio Perm												
v/c Ratio	0.49	0.36		0.76	0.78	0.04	0.46	0.40	0.08	0.55	0.92	
Uniform Delay, d1	63.5	63.0		59.0	59.2	41.6	67.8	16.3	6.5	63.7	23.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.8		12.9	16.5	0.0	3.4	0.6	0.0	3.3	7.6	
Delay (s)	64.7	63.7		71.9	75.7	41.6	71.3	16.9	6.5	67.0	31.1	
Level of Service	E	E		E	E	D	E	B	A	E	C	
Approach Delay (s)		64.1			68.9			16.4			32.2	
Approach LOS		E			E			B			C	
Intersection Summary												
HCM 2000 Control Delay			33.2									
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			79.2%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2025 No-Build
Weekday PM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	77	20	28	17	75
Maximum Split (%)	10.7%	55.0%	14.3%	20.0%	12.1%	53.6%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	36	51	128	8	36	53
End Time (s)	51	128	8	36	53	128
Yield/Force Off (s)	45	122	2	30	47	122
Yield/Force Off 170(s)	45	122	2	30	47	122
Local Start Time (s)	54	69	6	26	54	71
Local Yield (s)	63	0	20	48	65	0
Local Yield 170(s)	63	0	20	48	65	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 130
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	77 s	20 s	28 s
 Ø5	 Ø6		
17 s	75 s		

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	150	90	1150	2840	15
Future Vol, veh/h	5	150	90	1150	2840	15
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	98	98	93	93
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	6	174	92	1173	3054	16

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	3834	1536	3071
Stage 1	3063	-	-
Stage 2	771	-	-
Critical Hdwy	6.8	6.9	4.14
Critical Hdwy Stg 1	5.8	-	-
Critical Hdwy Stg 2	5.8	-	-
Follow-up Hdwy	3.5	3.3	2.22
Pot Cap-1 Maneuver	~ 3	~ 107	106
Stage 1	23	-	-
Stage 2	422	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	0	~ 107	106
Mov Cap-2 Maneuver	0	-	-
Stage 1	~ 3	-	-
Stage 2	422	-	-

Approach	EB	NB	SB
HCM Control Delay, s		9.3	0
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	106	-	-	107	-	-
HCM Lane V/C Ratio	0.866	-	-	1.63	-	-
HCM Control Delay (s)	127.8	-	-	\$ 392	-	-
HCM Lane LOS	F	-	-	F	-	-
HCM 95th %tile Q(veh)	5	-	-	13.3	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh	7.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	30	0	1	20	1
Future Vol, veh/h	0	30	0	1	20	1
Conflicting Peds, #/hr	0	9	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	25	25	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	45	0	4	31	2

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	66	11	0	0	4
Stage 1	2	-	-	-	-
Stage 2	64	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	944	1076	-	-	1631
Stage 1	1026	-	-	-	-
Stage 2	964	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	926	1067	-	-	1631
Mov Cap-2 Maneuver	926	-	-	-	-
Stage 1	1026	-	-	-	-
Stage 2	946	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	6.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1067	1631
HCM Lane V/C Ratio	-	-	0.042	0.019
HCM Control Delay (s)	-	-	8.5	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection

Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	15	15	0	15
Future Vol, veh/h	5	0	15	15	0	15
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	72	72	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	8	0	21	21	0	26

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	58	34	0	0	42
Stage 1	32	-	-	-	-
Stage 2	26	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	954	1045	-	-	1580
Stage 1	996	-	-	-	-
Stage 2	1002	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	954	1043	-	-	1580
Mov Cap-2 Maneuver	954	-	-	-	-
Stage 1	996	-	-	-	-
Stage 2	1002	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	954	1580
HCM Lane V/C Ratio	-	-	0.008	-
HCM Control Delay (s)	-	-	8.8	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2025 No-Build
Sat MIDDAY

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	10	0	0	60	80	15
Future Vol, veh/h	10	0	0	60	80	15
Conflicting Peds, #/hr	3	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	64	64	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	0	0	94	90	17

Major/Minor	Minor2	Major1	Major2
-------------	--------	--------	--------

Conflicting Flow All	196	102	107	0	-	0
Stage 1	99	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	797	959	1497	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	797	956	1497	-	-	-
Mov Cap-2 Maneuver	797	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	932	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1497	-	797	-	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	0	-	9.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Intersection Delay, s/veh 7.7
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	10	5	60	2	10	2	50	30	2	70	0
Future Vol, veh/h	0	10	5	60	2	10	2	50	30	2	70	0
Peak Hour Factor	0.60	0.60	0.60	0.82	0.82	0.82	0.74	0.74	0.74	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	17	8	73	2	12	3	68	41	2	80	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	7.3			8			7.6			7.7		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	83%	3%
Vol Thru, %	61%	67%	3%	97%
Vol Right, %	37%	33%	14%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	15	72	72
LT Vol	2	0	60	2
Through Vol	50	10	2	70
RT Vol	30	5	10	0
Lane Flow Rate	111	25	88	82
Geometry Grp	1	1	1	1
Degree of Util (X)	0.121	0.029	0.106	0.095
Departure Headway (Hd)	3.944	4.214	4.334	4.186
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	894	855	815	843
Service Time	2.032	2.214	2.426	2.276
HCM Lane V/C Ratio	0.124	0.029	0.108	0.097
HCM Control Delay	7.6	7.3	8	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.4	0.3

5: Route 120 & Old Etna Rd/Etna Rd
Queues

2025 No-Build
Sat MIDDAY

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	20	27	58	59	25	11	583	94	31	526
v/c Ratio	0.25	0.29	0.53	0.55	0.09	0.15	0.23	0.07	0.35	0.20
Control Delay	71.8	38.7	78.9	78.6	0.6	69.0	9.6	0.7	74.2	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.8	38.7	78.9	78.6	0.6	69.0	9.6	0.7	74.2	7.4
Queue Length 50th (ft)	18	6	54	56	0	10	102	0	28	62
Queue Length 95th (ft)	38	29	101	104	0	32	160	7	62	135
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	215	219	265	256	390	167	2514	1390	216	2629
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.12	0.22	0.23	0.06	0.07	0.23	0.07	0.14	0.20
Intersection Summary										

5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 No-Build
Sat MIDDAY

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	15	95	5	25	10	525	85	30	495	10
Future Volume (vph)	15	5	15	95	5	25	10	525	85	30	495	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.99	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1778	1664		1615	1550	1445	1805	3610	1615	1787	3563	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1778	1664		1615	1550	1445	1805	3610	1615	1787	3563	
Peak-hour factor, PHF	0.75	0.75	0.75	0.88	0.88	0.88	0.90	0.90	0.90	0.96	0.96	0.96
Adj. Flow (vph)	20	7	20	108	6	28	11	583	94	31	516	10
RTOR Reduction (vph)	0	19	0	0	2	21	0	0	24	0	1	0
Lane Group Flow (vph)	20	8	0	58	57	4	11	583	70	31	525	0
Confl. Peds. (#/hr)							1		1	1		1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	5.3	5.3		9.6	9.6	21.6	2.6	95.1	104.7	6.0	98.5	
Effective Green, g (s)	5.3	5.3		9.6	9.6	21.6	2.6	95.1	104.7	6.0	98.5	
Actuated g/C Ratio	0.04	0.04		0.07	0.07	0.15	0.02	0.68	0.75	0.04	0.70	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	67	62		110	106	222	33	2452	1207	76	2506	
v/s Ratio Prot	c0.01	0.00		0.04	c0.04	0.00	0.01	c0.16	0.04	c0.02	c0.15	
v/s Ratio Perm												
v/c Ratio	0.30	0.13		0.53	0.54	0.02	0.33	0.24	0.06	0.41	0.21	
Uniform Delay, d1	65.5	65.1		63.0	63.1	50.2	67.8	8.6	4.7	65.3	7.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.3		2.1	2.6	0.0	2.2	0.2	0.0	1.3	0.2	
Delay (s)	66.5	65.4		65.1	65.7	50.2	70.0	8.8	4.7	66.6	7.4	
Level of Service	E	E		E	E	D	E	A	A	E	A	
Approach Delay (s)		65.9			62.7			9.2			10.7	
Approach LOS		E			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			17.0									
HCM 2000 Volume to Capacity ratio			0.28									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			43.4%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

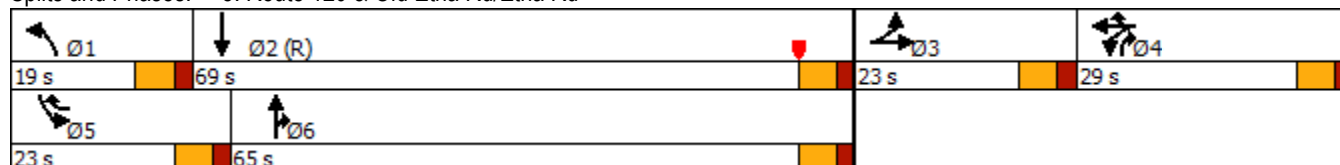
2025 No-Build
Sat MIDDAY

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	19	69	23	29	23	65
Maximum Split (%)	13.6%	49.3%	16.4%	20.7%	16.4%	46.4%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	40	59	128	11	40	63
End Time (s)	59	128	11	40	63	128
Yield/Force Off (s)	53	122	5	34	57	122
Yield/Force Off 170(s)	53	122	5	34	57	122
Local Start Time (s)	58	77	6	29	58	81
Local Yield (s)	71	0	23	52	75	0
Local Yield 170(s)	71	0	23	52	75	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 65
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd



Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	5	35	35	795	790	5
Future Vol, veh/h	5	35	35	795	790	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	96	96	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	6	42	36	828	814	5

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	1303	410	819	0	-	0
Stage 1	817	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.21	-	-	-
Pot Cap-1 Maneuver	155	596	812	-	-	-
Stage 1	400	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	148	596	812	-	-	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	382	-	-	-	-	-
Stage 2	590	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	13.9	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
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Capacity (veh/h)	812	-	148	596	-	-
HCM Lane V/C Ratio	0.045	-	0.041	0.071	-	-
HCM Control Delay (s)	9.6	-	30.4	11.5	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

1: Hanover St & Site Driveway/Evans Dr
HCM 6th TWSC

2025 Build
Weekday AM

Intersection

Int Delay, s/veh 376.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	60	0	5	20	530	0	0	1	210	3	10
Future Vol, veh/h	45	60	0	5	20	530	0	0	1	210	3	10
Conflicting Peds, #/hr	0	0	0	0	0	53	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	59	59	59	25	25	25	67	67	67
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	4	4	4
Mvmt Flow	50	67	0	8	34	898	0	0	4	313	4	15

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1159	652	12	683	657	65	19	0	0	14	0	0
Stage 1	638	638	-	12	12	-	-	-	-	-	-	-
Stage 2	521	14	-	671	645	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.5	6.2	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4	3.3	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	173	387	1069	366	387	1005	1611	-	-	1591	-	-
Stage 1	465	471	-	1014	890	-	-	-	-	-	-	-
Stage 2	539	884	-	449	471	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 6	306	1069	257	306	945	1611	-	-	1576	-	-
Mov Cap-2 Maneuver	~ 6	306	-	257	306	-	-	-	-	-	-	-
Stage 1	465	376	-	1004	881	-	-	-	-	-	-	-
Stage 2	~ 24	875	-	295	376	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, \$ 3832.2		80.4	0	7.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	14	860	1576	-	-
HCM Lane V/C Ratio	-	-	-	8.333	1.094	0.199	-	-
HCM Control Delay (s)	0	-	-	\$ 3832.2	80.4	7.8	0	-
HCM Lane LOS	A	-	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	15.6	24.5	0.7	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

2: Hanover St/Hanover St Ext & Old Etna Rd
HCM 6th TWSC

2025 Build
Weekday AM

Intersection

Int Delay, s/veh	6.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	140	10	90	215	35	30
Future Vol, veh/h	140	10	90	215	35	30
Conflicting Peds, #/hr	0	11	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	57	57	84	84	83	83
Heavy Vehicles, %	1	1	0	0	2	2
Mvmt Flow	246	18	107	256	42	36

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	358	249	0
Stage 1	238	-	-
Stage 2	120	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	642	792	-
Stage 1	804	-	-
Stage 2	908	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	617	781	-
Mov Cap-2 Maneuver	617	-	-
Stage 1	802	-	-
Stage 2	875	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	4.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	626	1190
HCM Lane V/C Ratio	-	-	0.42	0.035
HCM Control Delay (s)	-	-	14.9	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	2.1	0.1

3: Hanover St Ext & North Site Driveway HCM 6th TWSC

2025 Build
Weekday AM

Intersection

Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	30	10	90	35	10
Future Vol, veh/h	15	30	10	90	35	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	33	11	100	39	11

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	167	45	50	0	-	0
Stage 1	45	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	823	1025	1557	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	817	1025	1557	-	-	-
Mov Cap-2 Maneuver	817	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1557	-	945	-	-
HCM Lane V/C Ratio	0.007	-	0.053	-	-
HCM Control Delay (s)	7.3	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

4: Heater Rd/Mt Support Rd & Hanover St Ext
HCM 6th TWSC

2025 Build
Weekday AM

Intersection

Int Delay, s/veh 2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	95	5	1	235	200	35
Future Vol, veh/h	95	5	1	235	200	35
Conflicting Peds, #/hr	0	1	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	86	86	77	77
Heavy Vehicles, %	0	0	5	5	4	4
Mvmt Flow	103	5	1	273	260	45

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	566	292	313	0	-	0
Stage 1	291	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.245	-	-	-
Pot Cap-1 Maneuver	489	752	1230	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	481	746	1221	-	-	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	756	-	-	-	-	-
Stage 2	770	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	14.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1221	-	490	-	-
HCM Lane V/C Ratio	0.001	-	0.222	-	-
HCM Control Delay (s)	8	0	14.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection

Intersection Delay, s/veh 22.7
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	135	100	85	75	50	95	180	50	30	170	1
Future Vol, veh/h	3	135	100	85	75	50	95	180	50	30	170	1
Peak Hour Factor	0.69	0.69	0.69	0.90	0.90	0.90	0.83	0.83	0.83	0.66	0.66	0.66
Heavy Vehicles, %	4	4	4	2	2	2	4	4	4	6	6	6
Mvmt Flow	4	196	145	94	83	56	114	217	60	45	258	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	22.4			17.1			27.7			20.9		
HCM LOS	C			C			D			C		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	1%	40%	15%
Vol Thru, %	55%	57%	36%	85%
Vol Right, %	15%	42%	24%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	325	238	210	201
LT Vol	95	3	85	30
Through Vol	180	135	75	170
RT Vol	50	100	50	1
Lane Flow Rate	392	345	233	305
Geometry Grp	1	1	1	1
Degree of Util (X)	0.748	0.659	0.478	0.609
Departure Headway (Hd)	6.876	6.881	7.37	7.194
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	525	524	488	499
Service Time	4.939	4.948	5.443	5.263
HCM Lane V/C Ratio	0.747	0.658	0.477	0.611
HCM Control Delay	27.7	22.4	17.1	20.9
HCM Lane LOS	D	C	C	C
HCM 95th-tile Q	6.4	4.8	2.5	4

6: Route 120 & Old Etna Rd/Etna Rd Queues

2025 Build
Weekday AM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	186	148	110	113	67	52	2645	349	58	890
v/c Ratio	1.32	0.85	0.95	0.99	0.22	0.54	1.20	0.29	0.59	0.40
Control Delay	232.4	82.6	134.3	144.5	11.7	84.0	122.1	1.4	87.2	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	232.4	82.6	134.3	144.5	11.7	84.0	122.1	1.4	87.2	13.2
Queue Length 50th (ft)	~218	96	107	113	0	47	~1549	8	52	203
Queue Length 95th (ft)	#309	#164	#235	#259	43	88	#1548	19	97	234
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	141	174	116	114	318	113	2201	1185	113	2225
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.32	0.85	0.95	0.99	0.21	0.46	1.20	0.29	0.51	0.40

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 Build
Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	45	70	175	30	70	45	2275	300	50	680	85
Future Volume (vph)	145	45	70	175	30	70	45	2275	300	50	680	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.91		1.00	0.99	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	1718		1631	1577	1459	1770	3539	1583	1770	3472	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	1718		1631	1577	1459	1770	3539	1583	1770	3472	
Peak-hour factor, PHF	0.78	0.78	0.78	0.95	0.95	0.95	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	186	58	90	184	32	74	52	2645	349	58	791	99
RTOR Reduction (vph)	0	40	0	0	2	56	0	0	88	0	7	0
Lane Group Flow (vph)	186	108	0	110	111	11	52	2645	261	58	883	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	11.0	11.0		10.0	10.0	23.9	6.7	87.1	97.1	7.9	88.3	
Effective Green, g (s)	11.0	11.0		10.0	10.0	23.9	6.7	87.1	97.1	7.9	88.3	
Actuated g/C Ratio	0.08	0.08		0.07	0.07	0.17	0.05	0.62	0.69	0.06	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	141	134		116	112	249	84	2201	1097	99	2189	
v/s Ratio Prot	c0.10	0.06		0.07	c0.07	0.01	0.03	c0.75	0.16	c0.03	0.25	
v/s Ratio Perm												
v/c Ratio	1.32	0.81		0.95	0.99	0.05	0.62	1.20	0.24	0.59	0.40	
Uniform Delay, d1	64.5	63.5		64.7	65.0	48.5	65.4	26.5	7.9	64.5	12.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	184.7	27.5		66.1	82.2	0.0	9.2	95.4	0.0	5.6	0.6	
Delay (s)	249.2	91.0		130.8	147.2	48.5	74.6	121.9	7.9	70.0	13.4	
Level of Service	F	F		F	F	D	E	F	A	E	B	
Approach Delay (s)		179.1			118.2			108.0			16.8	
Approach LOS		F			F			F			B	
Intersection Summary												
HCM 2000 Control Delay			95.1			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.15									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				24.0		
Intersection Capacity Utilization			90.1%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

6: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2025 Build
Weekday AM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	92	17	16	15	92
Maximum Split (%)	10.7%	65.7%	12.1%	11.4%	10.7%	65.7%
Minimum Split (s)	15	16	15	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	21	36	128	5	21	36
End Time (s)	36	128	5	21	36	128
Yield/Force Off (s)	30	122	139	15	30	122
Yield/Force Off 170(s)	30	122	139	15	30	122
Local Start Time (s)	39	54	6	23	39	54
Local Yield (s)	48	0	17	33	48	0
Local Yield 170(s)	48	0	17	33	48	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 150
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	92 s	17 s	16 s
 Ø5	 Ø6		
15 s	92 s		

Intersection

Int Delay, s/veh 18.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	290	505	2935	1210	75
Future Vol, veh/h	0	290	505	2935	1210	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	89	89	93	93
Heavy Vehicles, %	1	1	2	2	4	4
Mvmt Flow	0	403	567	3298	1301	81

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	4125	691	1382
Stage 1	1342	-	-
Stage 2	2783	-	-
Critical Hdwy	6.82	6.92	4.14
Critical Hdwy Stg 1	5.82	-	-
Critical Hdwy Stg 2	5.82	-	-
Follow-up Hdwy	3.51	3.31	2.22
Pot Cap-1 Maneuver	2 ~ 389	~ 492	-
Stage 1	210	-	-
Stage 2	33	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	0 ~ 389	~ 492	-
Mov Cap-2 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	33	-	-

Approach	EB	NB	SB
HCM Control Delay, s	88.4	17.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	~ 492	-	-	389	-	-
HCM Lane V/C Ratio	1.153	-	-	1.035	-	-
HCM Control Delay (s)	117.4	-	0	88.4	-	-
HCM Lane LOS	F	-	A	F	-	-
HCM 95th %tile Q(veh)	20	-	-	13.2	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	30	0	1	45	75	0	5	5	95	5	25
Future Vol, veh/h	20	30	0	1	45	75	0	5	5	95	5	25
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	81	81	81	50	50	50	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	0	0	0
Mvmt Flow	22	33	0	1	56	93	0	10	10	130	7	34

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	377	304	24	316	316	18	41	0
Stage 1	284	284	-	15	15	-	-	-
Stage 2	93	20	-	301	301	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.1	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.2	-
Pot Cap-1 Maneuver	580	609	1052	637	600	1061	1581	-
Stage 1	723	676	-	1005	883	-	-	-
Stage 2	914	879	-	708	665	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	456	558	1052	569	550	1058	1581	-
Mov Cap-2 Maneuver	456	558	-	569	550	-	-	-
Stage 1	723	620	-	1005	883	-	-	-
Stage 2	779	879	-	614	610	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	10.7	0	5.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1581	-	-	512	783	1609	-
HCM Lane V/C Ratio	-	-	-	0.109	0.191	0.081	-
HCM Control Delay (s)	0	-	-	12.9	10.7	7.4	0
HCM Lane LOS	A	-	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.4	0.7	0.3	-

Intersection

Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	25	25	75	20	45
Future Vol, veh/h	55	25	25	75	20	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	59	59	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	67	30	42	127	25	56

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	212	106	0
Stage 1	106	-	-
Stage 2	106	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	781	954	-
Stage 1	923	-	-
Stage 2	923	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	767	954	-
Mov Cap-2 Maneuver	767	-	-
Stage 1	923	-	-
Stage 2	906	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	817	1421
HCM Lane V/C Ratio	-	-	0.119	0.018
HCM Control Delay (s)	-	-	10	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

3: Hanover St Ext & North Site Driveway HCM 6th TWSC

2025 Build
Weekday PM

Intersection

Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	25	25	50	20
Future Vol, veh/h	5	15	25	25	50	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	17	28	28	56	22

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	151	67	78	0	-	0
Stage 1	67	-	-	-	-	-
Stage 2	84	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	841	997	1520	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	825	997	1520	-	-	-
Mov Cap-2 Maneuver	825	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	3.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1520	-	948	-	-
HCM Lane V/C Ratio	0.018	-	0.023	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

4: Heater Rd/Mt Support Rd & Hanover St Ext
HCM 6th TWSC

2025 Build
Weekday PM

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	25	1	1	195	390	60
Future Vol, veh/h	25	1	1	195	390	60
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	97	97	75	75
Heavy Vehicles, %	0	0	6	6	3	3
Mvmt Flow	45	2	1	201	520	80

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	764	561	601	0	-	0
Stage 1	561	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.16	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.254	-	-	-
Pot Cap-1 Maneuver	375	531	957	-	-	-
Stage 1	575	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	374	530	956	-	-	-
Mov Cap-2 Maneuver	374	-	-	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	15.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	956	-	378	-	-
HCM Lane V/C Ratio	0.001	-	0.123	-	-
HCM Control Delay (s)	8.8	0	15.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection

Intersection Delay, s/veh 23.6
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	45	45	125	55	35	25	155	70	20	350	5
Future Vol, veh/h	3	45	45	125	55	35	25	155	70	20	350	5
Peak Hour Factor	0.45	0.45	0.45	0.95	0.95	0.95	0.77	0.77	0.77	0.76	0.76	0.76
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	3	3	3
Mvmt Flow	7	100	100	132	58	37	32	201	91	26	461	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	14.3			15.8			18			34.7		
HCM LOS	B			C			C			D		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	3%	58%	5%
Vol Thru, %	62%	48%	26%	93%
Vol Right, %	28%	48%	16%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	93	215	375
LT Vol	25	3	125	20
Through Vol	155	45	55	350
RT Vol	70	45	35	5
Lane Flow Rate	325	207	226	493
Geometry Grp	1	1	1	1
Degree of Util (X)	0.578	0.392	0.445	0.848
Departure Headway (Hd)	6.408	6.823	7.072	6.189
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	558	523	507	582
Service Time	4.496	4.92	5.165	4.264
HCM Lane V/C Ratio	0.582	0.396	0.446	0.847
HCM Control Delay	18	14.3	15.8	34.7
HCM Lane LOS	C	B	C	D
HCM 95th-tile Q	3.7	1.8	2.3	9.1

6: Route 120 & Old Etna Rd/Etna Rd
Queues

2025 Build
Weekday PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	90	102	160	160	58	16	824	133	62	2078
v/c Ratio	0.64	0.52	0.77	0.80	0.15	0.21	0.41	0.12	0.55	0.93
Control Delay	82.7	33.0	82.2	85.8	6.7	70.7	19.6	0.9	81.5	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.7	33.0	82.2	85.8	6.7	70.7	19.6	0.9	81.5	33.3
Queue Length 50th (ft)	81	29	149	156	0	14	222	0	56	761
Queue Length 95th (ft)	127	75	217	227	25	40	310	11	105	#1292
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	179	231	261	251	405	114	2008	1187	140	2236
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.44	0.61	0.64	0.14	0.14	0.41	0.11	0.44	0.93

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 Build
Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	25	60	260	10	55	15	775	125	60	1925	90
Future Volume (vph)	75	25	60	260	10	55	15	775	125	60	1925	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.99	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	1690		1663	1597	1488	1787	3574	1599	1787	3547	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	1690		1663	1597	1488	1787	3574	1599	1787	3547	
Peak-hour factor, PHF	0.83	0.83	0.83	0.86	0.86	0.86	0.94	0.94	0.94	0.97	0.97	0.97
Adj. Flow (vph)	90	30	72	302	12	64	16	824	133	62	1985	93
RTOR Reduction (vph)	0	64	0	0	1	45	0	0	42	0	2	0
Lane Group Flow (vph)	90	38	0	160	159	13	16	824	91	62	2076	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	11.0	11.0		17.6	17.6	32.4	2.8	78.6	96.2	8.8	84.6	
Effective Green, g (s)	11.0	11.0		17.6	17.6	32.4	2.8	78.6	96.2	8.8	84.6	
Actuated g/C Ratio	0.08	0.08		0.13	0.13	0.23	0.02	0.56	0.69	0.06	0.60	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	141	132		209	200	344	35	2006	1098	112	2143	
v/s Ratio Prot	c0.05	0.02		0.10	c0.10	0.01	0.01	0.23	0.06	c0.03	c0.59	
v/s Ratio Perm												
v/c Ratio	0.64	0.29		0.77	0.80	0.04	0.46	0.41	0.08	0.55	0.97	
Uniform Delay, d1	62.6	60.8		59.2	59.5	41.7	67.8	17.5	7.3	63.7	26.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.8	0.4		13.9	18.1	0.0	3.4	0.6	0.0	3.3	13.4	
Delay (s)	69.4	61.3		73.1	77.6	41.7	71.3	18.1	7.3	67.0	39.8	
Level of Service	E	E		E	E	D	E	B	A	E	D	
Approach Delay (s)		65.1			70.2			17.5			40.6	
Approach LOS		E			E			B			D	
Intersection Summary												
HCM 2000 Control Delay			38.8									
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			80.8%									
Analysis Period (min)			15									
c Critical Lane Group												

6: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2025 Build
Weekday PM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	77	20	28	17	75
Maximum Split (%)	10.7%	55.0%	14.3%	20.0%	12.1%	53.6%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	36	51	128	8	36	53
End Time (s)	51	128	8	36	53	128
Yield/Force Off (s)	45	122	2	30	47	122
Yield/Force Off 170(s)	45	122	2	30	47	122
Local Start Time (s)	54	69	6	26	54	71
Local Yield (s)	63	0	20	48	65	0
Local Yield 170(s)	63	0	20	48	65	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 130
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	77 s	20 s	28 s
 Ø5	 Ø6		
17 s	75 s		

Intersection

Int Delay, s/veh 7.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	180	135	1150	2840	15
Future Vol, veh/h	5	180	135	1150	2840	15
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	98	98	93	93
Heavy Vehicles, %	0	1	2	2	1	1
Mvmt Flow	6	209	138	1173	3054	16

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	3926	1536	3071
Stage 1	3063	-	-
Stage 2	863	-	-
Critical Hdwy	6.8	6.92	4.14
Critical Hdwy Stg 1	5.8	-	-
Critical Hdwy Stg 2	5.8	-	-
Follow-up Hdwy	3.5	3.31	2.22
Pot Cap-1 Maneuver	~ 2	~ 106	~ 106
Stage 1	23	-	-
Stage 2	378	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	0	~ 106	~ 106
Mov Cap-2 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	378	-	-

Approach	EB	NB	SB
HCM Control Delay, s		27.6	0
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	~ 106	-	-	106	-	-
HCM Lane V/C Ratio	1.3	-	-	1.975	-	-
HCM Control Delay (s)	262.6	-	-	\$ 538	-	-
HCM Lane LOS	F	-	-	F	-	-
HCM 95th %tile Q(veh)	9.4	-	-	17.4	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	35	0	0	40	30	0	0	1	20	1	20
Future Vol, veh/h	25	35	0	0	40	30	0	0	1	20	1	20
Conflicting Peds, #/hr	0	0	0	0	0	9	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	67	67	67	25	25	25	64	64	64
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	28	39	0	0	60	45	0	0	4	31	2	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	144	84	18	101	97	11	33	0	0	4	0	0
Stage 1	80	80	-	2	2	-	-	-	-	-	-	-
Stage 2	64	4	-	99	95	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	825	806	1061	885	797	1076	1592	-	-	1631	-	-
Stage 1	929	828	-	1026	898	-	-	-	-	-	-	-
Stage 2	947	892	-	912	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	728	791	1061	840	782	1067	1592	-	-	1631	-	-
Mov Cap-2 Maneuver	728	791	-	840	782	-	-	-	-	-	-	-
Stage 1	929	812	-	1026	898	-	-	-	-	-	-	-
Stage 2	840	892	-	852	804	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.2			9.6			0			3.5		
HCM LOS	B			A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	763	883	1631	-	-
HCM Lane V/C Ratio	-	-	-	0.087	0.118	0.019	-	-
HCM Control Delay (s)	0	-	-	10.2	9.6	7.2	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4	0.1	-	-

2: Hanover St/Hanover St Ext & Old Etna Rd
HCM 6th TWSC

2025 Build
Sat MIDDAY

Intersection

Int Delay, s/veh	4.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	20	25	30	20	15
Future Vol, veh/h	25	20	25	30	20	15
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	72	72	58	58
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	40	32	35	42	34	26

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	150	58	0	0	77
Stage 1	56	-	-	-	-
Stage 2	94	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	847	1014	-	-	1535
Stage 1	972	-	-	-	-
Stage 2	935	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	828	1012	-	-	1535
Mov Cap-2 Maneuver	828	-	-	-	-
Stage 1	972	-	-	-	-
Stage 2	914	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	4.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	901	1535
HCM Lane V/C Ratio	-	-	0.079	0.022
HCM Control Delay (s)	-	-	9.3	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

3: Hanover St Ext & North Site Driveway HCM 6th TWSC

2025 Build
Sat MIDDAY

Intersection

Int Delay, s/veh	3.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	20	20	25	15	20
Future Vol, veh/h	10	20	20	25	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	22	22	28	17	22

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	100	28	39	0	0
Stage 1	28	-	-	-	-
Stage 2	72	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	899	1047	1571	-	-
Stage 1	995	-	-	-	-
Stage 2	951	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	886	1047	1571	-	-
Mov Cap-2 Maneuver	886	-	-	-	-
Stage 1	981	-	-	-	-
Stage 2	951	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	3.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1571	-	987	-	-
HCM Lane V/C Ratio	0.014	-	0.034	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

4: Heater Rd/Mt Support Rd & Hanover St Ext
HCM 6th TWSC

2025 Build
Sat MIDDAY

Intersection

Int Delay, s/veh 1.5

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	30	0	0	60	80	30
Future Vol, veh/h	30	0	0	60	80	30
Conflicting Peds, #/hr	3	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	64	64	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	40	0	0	94	90	34

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	204	110	124	0	-	0
Stage 1	107	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	789	949	1475	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	789	946	1475	-	-	-
Mov Cap-2 Maneuver	789	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	932	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1475	-	789	-	-
HCM Lane V/C Ratio	-	-	0.051	-	-
HCM Control Delay (s)	0	-	9.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Intersection Delay, s/veh 8.2
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	50	5	60	45	10	2	50	30	2	70	0
Future Vol, veh/h	0	50	5	60	45	10	2	50	30	2	70	0
Peak Hour Factor	0.60	0.60	0.60	0.82	0.82	0.82	0.74	0.74	0.74	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	83	8	73	55	12	3	68	41	2	80	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	8.5	8	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	52%	3%
Vol Thru, %	61%	91%	39%	97%
Vol Right, %	37%	9%	9%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	55	115	72
LT Vol	2	0	60	2
Through Vol	50	50	45	70
RT Vol	30	5	10	0
Lane Flow Rate	111	92	140	82
Geometry Grp	1	1	1	1
Degree of Util (X)	0.133	0.113	0.175	0.104
Departure Headway (Hd)	4.315	4.444	4.493	4.564
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	832	808	799	786
Service Time	2.337	2.466	2.515	2.586
HCM Lane V/C Ratio	0.133	0.114	0.175	0.104
HCM Control Delay	8	8	8.5	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.4	0.6	0.3

6: Route 120 & Old Etna Rd/Etna Rd
Queues

2025 Build
Sat MIDDAY

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	73	27	58	59	25	11	583	94	31	568
v/c Ratio	0.57	0.20	0.53	0.55	0.09	0.15	0.24	0.08	0.35	0.23
Control Delay	79.1	31.6	78.9	78.6	0.6	69.0	11.5	0.9	74.2	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.1	31.6	78.9	78.6	0.6	69.0	11.5	0.9	74.2	9.1
Queue Length 50th (ft)	66	6	54	56	0	10	113	0	28	76
Queue Length 95th (ft)	95	28	101	104	0	32	180	10	62	165
Internal Link Dist (ft)		539		473			1647			1282
Turn Bay Length (ft)	65		300		75	350		325	300	
Base Capacity (vph)	215	219	265	256	390	167	2419	1350	216	2505
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.12	0.22	0.23	0.06	0.07	0.24	0.07	0.14	0.23
Intersection Summary										

6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 Build
Sat MIDDAY

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	5	15	95	5	25	10	525	85	30	495	50
Future Volume (vph)	55	5	15	95	5	25	10	525	85	30	495	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.89		1.00	0.99	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1778	1664		1615	1550	1445	1805	3610	1615	1787	3518	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1778	1664		1615	1550	1445	1805	3610	1615	1787	3518	
Peak-hour factor, PHF	0.75	0.75	0.75	0.88	0.88	0.88	0.90	0.90	0.90	0.96	0.96	0.96
Adj. Flow (vph)	73	7	20	108	6	28	11	583	94	31	516	52
RTOR Reduction (vph)	0	19	0	0	2	21	0	0	26	0	3	0
Lane Group Flow (vph)	73	8	0	58	57	4	11	583	68	31	565	0
Confl. Peds. (#/hr)							1		1	1		1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3		4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	9.0	9.0		9.6	9.6	21.6	2.6	91.4	101.0	6.0	94.8	
Effective Green, g (s)	9.0	9.0		9.6	9.6	21.6	2.6	91.4	101.0	6.0	94.8	
Actuated g/C Ratio	0.06	0.06		0.07	0.07	0.15	0.02	0.65	0.72	0.04	0.68	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	114	106		110	106	222	33	2356	1165	76	2382	
v/s Ratio Prot	c0.04	0.00		0.04	c0.04	0.00	0.01	c0.16	0.04	c0.02	c0.16	
v/s Ratio Perm												
v/c Ratio	0.64	0.08		0.53	0.54	0.02	0.33	0.25	0.06	0.41	0.24	
Uniform Delay, d1	63.9	61.6		63.0	63.1	50.2	67.8	10.1	5.7	65.3	8.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.8	0.1		2.1	2.6	0.0	2.2	0.3	0.0	1.3	0.2	
Delay (s)	72.8	61.7		65.1	65.7	50.2	70.0	10.3	5.7	66.6	8.9	
Level of Service	E	E		E	E	D	E	B	A	E	A	
Approach Delay (s)		69.8			62.7			10.6			11.9	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			19.8									
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			44.2%									
Analysis Period (min)			15									
c Critical Lane Group												

6: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2025 Build
Sat MIDDAY

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	19	69	23	29	23	65
Maximum Split (%)	13.6%	49.3%	16.4%	20.7%	16.4%	46.4%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	40	59	128	11	40	63
End Time (s)	59	128	11	40	63	128
Yield/Force Off (s)	53	122	5	34	57	122
Yield/Force Off 170(s)	53	122	5	34	57	122
Local Start Time (s)	58	77	6	29	58	81
Local Yield (s)	71	0	23	52	75	0
Local Yield 170(s)	71	0	23	52	75	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 65
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	69 s	23 s	29 s
 Ø5	 Ø6		
23 s	65 s		

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	70	70	795	790	5
Future Vol, veh/h	5	70	70	795	790	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	40	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	96	96	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	6	84	73	828	814	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1377	410	819
Stage 1	817	-	-
Stage 2	560	-	-
Critical Hdwy	6.8	6.9	4.12
Critical Hdwy Stg 1	5.8	-	-
Critical Hdwy Stg 2	5.8	-	-
Follow-up Hdwy	3.5	3.3	2.21
Pot Cap-1 Maneuver	138	596	812
Stage 1	400	-	-
Stage 2	541	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	126	596	812
Mov Cap-2 Maneuver	126	-	-
Stage 1	364	-	-
Stage 2	541	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	812	-	126	596	-	-
HCM Lane V/C Ratio	0.09	-	0.048	0.142	-	-
HCM Control Delay (s)	9.9	-	35	12	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	0.5	-	-

Intersection

Int Delay, s/veh	13.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	530	0	1	210	3
Future Vol, veh/h	5	530	0	1	210	3
Conflicting Peds, #/hr	0	53	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	4	4
Mvmt Flow	6	589	0	1	233	3

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	480	64	0
Stage 1	11	-	-
Stage 2	469	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	548	1006	-
Stage 1	1017	-	-
Stage 2	634	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	462	946	-
Mov Cap-2 Maneuver	462	-	-
Stage 1	1007	-	-
Stage 2	540	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	7.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	937	1580
HCM Lane V/C Ratio	-	-	0.634	0.148
HCM Control Delay (s)	-	-	15.3	7.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	4.7	0.5

Intersection

Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	0	75	185	1	30
Future Vol, veh/h	130	0	75	185	1	30
Conflicting Peds, #/hr	0	11	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	1	0	0	2	2
Mvmt Flow	144	0	83	206	1	33

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	224	200	0
Stage 1	189	-	-
Stage 2	35	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	766	843	-
Stage 1	846	-	-
Stage 2	990	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	763	832	-
Mov Cap-2 Maneuver	763	-	-
Stage 1	843	-	-
Stage 2	989	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	763	1266
HCM Lane V/C Ratio	-	-	0.189	0.001
HCM Control Delay (s)	-	-	10.8	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2035 No-Build
Weekday AM

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	65	5	1	235	200	25
Future Vol, veh/h	65	5	1	235	200	25
Conflicting Peds, #/hr	0	1	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	90	90	90	90
Heavy Vehicles, %	0	0	5	5	4	4
Mvmt Flow	71	5	1	261	222	28

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	507	245	258	0	-	0
Stage 1	244	-	-	-	-	-
Stage 2	263	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.245	-	-	-
Pot Cap-1 Maneuver	529	799	1289	-	-	-
Stage 1	801	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	520	792	1279	-	-	-
Mov Cap-2 Maneuver	520	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	780	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1279	-	533	-	-
HCM Lane V/C Ratio	0.001	-	0.143	-	-
HCM Control Delay (s)	7.8	0	12.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection

Intersection Delay, s/veh 14.1
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	75	100	85	60	50	95	210	50	30	170	1
Future Vol, veh/h	3	75	100	85	60	50	95	210	50	30	170	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	4	2	2	2	4	4	4	6	6	6
Mvmt Flow	3	83	111	94	67	56	106	233	56	33	189	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	11.7			12.5			17.1			12.6		
HCM LOS	B			B			C			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	2%	44%	15%
Vol Thru, %	59%	42%	31%	85%
Vol Right, %	14%	56%	26%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	355	178	195	201
LT Vol	95	3	85	30
Through Vol	210	75	60	170
RT Vol	50	100	50	1
Lane Flow Rate	394	198	217	223
Geometry Grp	1	1	1	1
Degree of Util (X)	0.611	0.321	0.362	0.37
Departure Headway (Hd)	5.581	5.838	6.016	5.96
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	643	609	594	599
Service Time	3.656	3.93	4.108	4.049
HCM Lane V/C Ratio	0.613	0.325	0.365	0.372
HCM Control Delay	17.1	11.7	12.5	12.6
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4.2	1.4	1.6	1.7

5: Route 120 & Old Etna Rd/Etna Rd Queues

2035 No-Build
Weekday AM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	100	56	83	205	37	79	56	2783	372	61	911
v/c Ratio	0.87	0.24	0.31	0.86	0.29	0.25	0.54	1.24	0.31	0.61	0.41
Control Delay	118.5	65.1	10.5	95.9	67.8	15.3	82.5	136.5	1.4	89.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	118.5	65.1	10.5	95.9	67.8	15.3	82.5	136.5	1.4	89.2	13.3
Queue Length 50th (ft)	92	25	0	96	33	7	50	~1661	7	55	203
Queue Length 95th (ft)	#203	50	40	#168	71	54	97	#1778	21	105	253
Internal Link Dist (ft)		539			473			1647			1282
Turn Bay Length (ft)	65			300		75	350		325	300	
Base Capacity (vph)	115	230	289	237	129	331	126	2250	1209	113	2213
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.24	0.29	0.86	0.29	0.24	0.44	1.24	0.31	0.54	0.41

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2035 No-Build
Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	50	75	195	35	75	50	2505	335	55	745	75
Future Volume (vph)	90	50	75	195	35	75	50	2505	335	55	745	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	3330	1807	1536	1770	3539	1583	1770	3484	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	3592	1607	3330	1807	1536	1770	3539	1583	1770	3484	
Peak-hour factor, PHF	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	56	83	205	37	79	56	2783	372	61	828	83
RTOR Reduction (vph)	0	0	73	0	0	58	0	0	89	0	5	0
Lane Group Flow (vph)	100	56	10	205	37	21	56	2783	283	61	906	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3	3 1	4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	9.0	9.0	17.2	10.0	10.0	24.0	8.2	89.0	99.0	8.0	88.8	
Effective Green, g (s)	9.0	9.0	17.2	10.0	10.0	24.0	8.2	89.0	99.0	8.0	88.8	
Actuated g/C Ratio	0.06	0.06	0.12	0.07	0.07	0.17	0.06	0.64	0.71	0.06	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	115	230	197	237	129	263	103	2249	1119	101	2209	
v/s Ratio Prot	c0.06	0.02	0.01	c0.06	0.02	0.01	0.03	c0.79	0.18	c0.03	0.26	
v/s Ratio Perm												
v/c Ratio	0.87	0.24	0.05	0.86	0.29	0.08	0.54	1.24	0.25	0.60	0.41	
Uniform Delay, d1	64.9	62.3	54.2	64.3	61.6	48.7	64.1	25.5	7.3	64.5	12.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	44.4	0.2	0.0	25.6	0.4	0.0	3.1	110.9	0.0	6.8	0.6	
Delay (s)	109.3	62.5	54.2	89.9	62.1	48.8	67.2	136.4	7.4	71.3	13.2	
Level of Service	F	E	D	F	E	D	E	F	A	E	B	
Approach Delay (s)		79.2			76.6			120.2			16.9	
Approach LOS		E			E			F			B	
Intersection Summary												
HCM 2000 Control Delay			94.0									
HCM 2000 Volume to Capacity ratio			1.13									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			93.9%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2035 No-Build
Weekday AM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	16	93	15	16	15	94
Maximum Split (%)	11.4%	66.4%	10.7%	11.4%	10.7%	67.1%
Minimum Split (s)	15	16	15	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	19	35	128	3	19	34
End Time (s)	35	128	3	19	34	128
Yield/Force Off (s)	29	122	137	13	28	122
Yield/Force Off 170(s)	29	122	137	13	28	122
Local Start Time (s)	37	53	6	21	37	52
Local Yield (s)	47	0	15	31	46	0
Local Yield 170(s)	47	0	15	31	46	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 150
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
16 s	93 s	15 s	16 s
 Ø5	 Ø6		
15 s	94 s		

Intersection

Int Delay, s/veh 88.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations		↗	↘	↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	250	540	3230	1335	85
Future Vol, veh/h	0	250	540	3230	1335	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	93	93
Heavy Vehicles, %	1	1	2	2	4	4
Mvmt Flow	0	278	600	3589	1435	91

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	-	763	1526	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	5.34	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	3.12	-	-	-
Pot Cap-1 Maneuver	0	299	~ 216	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	299	~ 216	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	73.8	121.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	~ 216	-	299	-	-
HCM Lane V/C Ratio	2.778	-	0.929	-	-
HCM Control Delay (s)	\$ 846.9	-	73.8	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	52.3	-	9	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	85	5	5	95	5
Future Vol, veh/h	1	85	5	5	95	5
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	0	0	0	0
Mvmt Flow	1	94	6	6	106	6

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	227	12	0
Stage 1	9	-	-
Stage 2	218	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	761	1069	-
Stage 1	1014	-	-
Stage 2	818	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	711	1066	-
Mov Cap-2 Maneuver	711	-	-
Stage 1	1014	-	-
Stage 2	764	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1060	1620
HCM Lane V/C Ratio	-	-	0.09	0.065
HCM Control Delay (s)	-	-	8.7	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2

Intersection

Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	3	20	65	3	45
Future Vol, veh/h	30	3	20	65	3	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	33	3	22	72	3	50

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	114	58	0
Stage 1	58	-	-
Stage 2	56	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	887	1014	-
Stage 1	970	-	-
Stage 2	972	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	885	1014	-
Mov Cap-2 Maneuver	885	-	-
Stage 1	970	-	-
Stage 2	970	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	895	1513
HCM Lane V/C Ratio	-	-	0.041	0.002
HCM Control Delay (s)	-	-	9.2	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2035 No-Build
Weekday PM

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	10	1	1	195	390	40
Future Vol, veh/h	10	1	1	195	390	40
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	97	97	90	90
Heavy Vehicles, %	0	0	6	6	3	3
Mvmt Flow	11	1	1	201	433	44

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	659	456	478	0	-	0
Stage 1	456	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.16	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.254	-	-	-
Pot Cap-1 Maneuver	432	609	1064	-	-	-
Stage 1	643	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	431	608	1063	-	-	-
Mov Cap-2 Maneuver	431	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
-----------------------	-----	-----	-------	-----	-----

Capacity (veh/h)	1063	-	443	-	-
HCM Lane V/C Ratio	0.001	-	0.028	-	-
HCM Control Delay (s)	8.4	0	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Intersection Delay, s/veh 13.1
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	25	45	125	10	35	25	155	70	20	350	5
Future Vol, veh/h	3	25	45	125	10	35	25	155	70	20	350	5
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	3	3	3
Mvmt Flow	3	28	50	132	11	37	28	172	78	22	389	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.6			11.4			11.7			15.5		
HCM LOS	A			B			B			C		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	4%	74%	5%
Vol Thru, %	62%	34%	6%	93%
Vol Right, %	28%	62%	21%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	73	170	375
LT Vol	25	3	125	20
Through Vol	155	25	10	350
RT Vol	70	45	35	5
Lane Flow Rate	278	81	179	417
Geometry Grp	1	1	1	1
Degree of Util (X)	0.401	0.128	0.293	0.595
Departure Headway (Hd)	5.203	5.7	5.89	5.14
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	692	626	608	700
Service Time	3.244	3.757	3.938	3.176
HCM Lane V/C Ratio	0.402	0.129	0.294	0.596
HCM Control Delay	11.7	9.6	11.4	15.5
HCM Lane LOS	B	A	B	C
HCM 95th-tile Q	1.9	0.4	1.2	4

5: Route 120 & Old Etna Rd/Etna Rd
Queues

2035 No-Build
Weekday PM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	61	33	72	317	11	67	16	904	149	67	2226
v/c Ratio	0.57	0.15	0.32	0.90	0.06	0.17	0.21	0.42	0.13	0.59	0.98
Control Delay	84.2	63.1	12.4	88.8	58.7	10.1	70.7	16.0	0.8	83.4	40.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.2	63.1	12.4	88.8	58.7	10.1	70.7	16.0	0.8	83.4	40.0
Queue Length 50th (ft)	55	15	1	150	9	0	14	223	0	60	~1017
Queue Length 95th (ft)	104	33	39	#254	30	39	40	278	10	112	#1267
Internal Link Dist (ft)		539			473			1647			1282
Turn Bay Length (ft)	65			300		75	350		325	300	
Base Capacity (vph)	128	256	278	354	192	408	114	2145	1170	140	2271
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.13	0.26	0.90	0.06	0.16	0.14	0.42	0.13	0.48	0.98

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2035 No-Build
Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	30	65	285	10	60	15	850	140	65	2115	45
Future Volume (vph)	55	30	65	285	10	60	15	850	140	65	2115	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	3397	1843	1567	1787	3574	1599	1787	3562	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	3592	1607	3397	1843	1567	1787	3574	1599	1787	3562	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.97	0.97	0.97
Adj. Flow (vph)	61	33	72	317	11	67	16	904	149	67	2180	46
RTOR Reduction (vph)	0	0	63	0	0	53	0	0	44	0	1	0
Lane Group Flow (vph)	61	33	9	317	11	14	16	904	105	67	2225	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3	3 1	4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	8.4	8.4	13.4	14.6	14.6	29.6	5.0	84.0	98.6	9.0	88.0	
Effective Green, g (s)	8.4	8.4	13.4	14.6	14.6	29.6	5.0	84.0	98.6	9.0	88.0	
Actuated g/C Ratio	0.06	0.06	0.10	0.10	0.10	0.21	0.04	0.60	0.70	0.06	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	107	215	153	354	192	331	63	2144	1126	114	2238	
v/s Ratio Prot	c0.03	0.01	0.01	c0.09	0.01	0.01	0.01	0.25	0.07	c0.04	c0.62	
v/s Ratio Perm												
v/c Ratio	0.57	0.15	0.06	0.90	0.06	0.04	0.25	0.42	0.09	0.59	0.99	
Uniform Delay, d1	64.0	62.4	57.6	61.9	56.5	43.9	65.7	15.0	6.6	63.7	25.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.5	0.1	0.1	23.3	0.0	0.0	0.8	0.6	0.0	4.9	17.7	
Delay (s)	68.5	62.5	57.6	85.3	56.5	43.9	66.5	15.6	6.6	68.6	43.4	
Level of Service	E	E	E	F	E	D	E	B	A	E	D	
Approach Delay (s)		62.6			77.5			15.1			44.2	
Approach LOS		E			E			B			D	
Intersection Summary												
HCM 2000 Control Delay			40.4									
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			87.2%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2035 No-Build
Weekday PM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	90	16	19	17	88
Maximum Split (%)	10.7%	64.3%	11.4%	13.6%	12.1%	62.9%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	23	38	128	4	23	40
End Time (s)	38	128	4	23	40	128
Yield/Force Off (s)	32	122	138	17	34	122
Yield/Force Off 170(s)	32	122	138	17	34	122
Local Start Time (s)	41	56	6	22	41	58
Local Yield (s)	50	0	16	35	52	0
Local Yield 170(s)	50	0	16	35	52	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 140
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	90 s	16 s	19 s
 Ø5	 Ø6		
17 s	88 s		

Intersection

Int Delay, s/veh 67.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	165	100	1265	3125	15
Future Vol, veh/h	0	165	100	1265	3125	15
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	98	98	93	93
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	0	183	102	1291	3360	16

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	- 1689	3377	0 - 0
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	- 7.1	5.34	- - -
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	- 3.9	3.12	- - -
Pot Cap-1 Maneuver	0 ~ 72	~ 24	- - -
Stage 1	0	-	- - -
Stage 2	0	-	- - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	- ~ 72	~ 24	- - -
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	NB	SB
HCM Control Delay, s	825.2	131.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 24	-	72	-	-
HCM Lane V/C Ratio	4.252	-	2.546	-	-
HCM Control Delay (s)	\$ 1793.4	-	\$ 825.2	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	12.8	-	17.8	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 7.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	35	0	1	20	1
Future Vol, veh/h	0	35	0	1	20	1
Conflicting Peds, #/hr	0	9	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	39	0	1	22	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	46	10	0
Stage 1	1	-	-
Stage 2	45	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	969	1077	-
Stage 1	1028	-	-
Stage 2	983	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	956	1068	-
Mov Cap-2 Maneuver	956	-	-
Stage 1	1028	-	-
Stage 2	970	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	6.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1068	1635
HCM Lane V/C Ratio	-	-	0.036	0.014
HCM Control Delay (s)	-	-	8.5	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection

Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	15	15	0	15
Future Vol, veh/h	5	0	15	15	0	15
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	6	0	17	17	0	17

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	43	28	0
Stage 1	26	-	-
Stage 2	17	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	973	1053	-
Stage 1	1002	-	-
Stage 2	1011	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	973	1051	-
Mov Cap-2 Maneuver	973	-	-
Stage 1	1002	-	-
Stage 2	1011	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	973	1591
HCM Lane V/C Ratio	-	-	0.006	-
HCM Control Delay (s)	-	-	8.7	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2035 No-Build
Sat MIDDAY

Intersection

Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	0	0	60	80	15
Future Vol, veh/h	10	0	0	60	80	15
Conflicting Peds, #/hr	3	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	0	67	89	17

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	168	101	106	0	-	0
Stage 1	98	-	-	-	-	-
Stage 2	70	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	827	960	1498	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	827	957	1498	-	-	-
Mov Cap-2 Maneuver	827	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	958	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1498	-	827	-	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Control Delay (s)	0	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection

Intersection Delay, s/veh 7.6
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	15	5	60	2	10	2	50	30	2	70	0
Future Vol, veh/h	0	15	5	60	2	10	2	50	30	2	70	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	17	6	67	2	11	2	56	33	2	78	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	7.3			7.8			7.4			7.7		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	83%	3%
Vol Thru, %	61%	75%	3%	97%
Vol Right, %	37%	25%	14%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	20	72	72
LT Vol	2	0	60	2
Through Vol	50	15	2	70
RT Vol	30	5	10	0
Lane Flow Rate	91	22	80	80
Geometry Grp	1	1	1	1
Degree of Util (X)	0.099	0.025	0.095	0.092
Departure Headway (Hd)	3.924	4.108	4.296	4.154
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	901	856	824	853
Service Time	2	2.205	2.375	2.227
HCM Lane V/C Ratio	0.101	0.026	0.097	0.094
HCM Control Delay	7.4	7.3	7.8	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.3	0.3

5: Route 120 & Old Etna Rd/Etna Rd
Queues

2035 No-Build
Sat MIDDAY

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	22	6	17	111	6	28	11	644	100	36	578
v/c Ratio	0.27	0.04	0.09	0.52	0.05	0.09	0.15	0.25	0.08	0.38	0.22
Control Delay	72.2	63.2	0.8	71.5	60.8	0.6	69.0	9.0	0.7	75.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.2	63.2	0.8	71.5	60.8	0.6	69.0	9.0	0.7	75.0	7.6
Queue Length 50th (ft)	20	2	0	51	5	0	10	115	0	32	96
Queue Length 95th (ft)	49	10	0	82	20	0	32	174	8	69	144
Internal Link Dist (ft)		539			473			1647			1282
Turn Bay Length (ft)	65			300		75	350		325	300	
Base Capacity (vph)	203	406	372	471	255	402	167	2571	1405	216	2637
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.01	0.05	0.24	0.02	0.07	0.07	0.25	0.07	0.17	0.22
Intersection Summary											

5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2035 No-Build
Sat MIDDAY

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	5	15	100	5	25	10	580	90	35	545	10
Future Volume (vph)	20	5	15	100	5	25	10	580	90	35	545	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1778	3556	1591	3298	1789	1521	1805	3610	1615	1787	3564	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1778	3556	1591	3298	1789	1521	1805	3610	1615	1787	3564	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96
Adj. Flow (vph)	22	6	17	111	6	28	11	644	100	36	568	10
RTOR Reduction (vph)	0	0	16	0	0	24	0	0	25	0	1	0
Lane Group Flow (vph)	22	6	1	111	6	4	11	644	75	36	577	0
Confl. Peds. (#/hr)							1		1	1		1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3	3 1	4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	4.4	4.4	8.1	9.1	9.1	21.5	3.7	96.1	105.2	6.4	98.8	
Effective Green, g (s)	4.4	4.4	8.1	9.1	9.1	21.5	3.7	96.1	105.2	6.4	98.8	
Actuated g/C Ratio	0.03	0.03	0.06	0.06	0.06	0.15	0.03	0.69	0.75	0.05	0.71	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	55	111	92	214	116	233	47	2478	1213	81	2515	
v/s Ratio Prot	c0.01	0.00	0.00	c0.03	0.00	0.00	0.01	c0.18	0.05	c0.02	c0.16	
v/s Ratio Perm												
v/c Ratio	0.40	0.05	0.01	0.52	0.05	0.02	0.23	0.26	0.06	0.44	0.23	
Uniform Delay, d1	66.5	65.8	62.2	63.3	61.4	50.3	66.8	8.4	4.5	65.1	7.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.1	0.0	0.9	0.1	0.0	0.9	0.3	0.0	1.4	0.2	
Delay (s)	68.2	65.9	62.2	64.2	61.5	50.3	67.7	8.6	4.5	66.5	7.4	
Level of Service	E	E	E	E	E	D	E	A	A	E	A	
Approach Delay (s)		65.6			61.4			9.0			10.9	
Approach LOS		E			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			16.2									
HCM 2000 Volume to Capacity ratio			0.30									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			44.7%									
Analysis Period (min)			15									
c Critical Lane Group												

5: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2035 No-Build
Sat MIDDAY

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	19	73	22	26	23	69
Maximum Split (%)	13.6%	52.1%	15.7%	18.6%	16.4%	49.3%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	36	55	128	10	36	59
End Time (s)	55	128	10	36	59	128
Yield/Force Off (s)	49	122	4	30	53	122
Yield/Force Off 170(s)	49	122	4	30	53	122
Local Start Time (s)	54	73	6	28	54	77
Local Yield (s)	67	0	22	48	71	0
Local Yield 170(s)	67	0	22	48	71	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 65
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	73 s	22 s	26 s
 Ø5	 Ø6		
23 s	69 s		

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	35	35	875	870	5
Future Vol, veh/h	0	35	35	875	870	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	96	96	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	39	36	911	897	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	451	902
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.1	5.32
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.9	3.11
Pot Cap-1 Maneuver	0	479	439
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	479	439
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	439	-	479	-	-
HCM Lane V/C Ratio	0.083	-	0.081	-	-
HCM Control Delay (s)	13.9	-	13.2	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-

1: Hanover St & South Site Driveway/Evans Dr
HCM 6th TWSC

2035 Build
Weekday AM

Intersection

Int Delay, s/veh	21.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	60	0	5	20	530	0	0	1	210	3	10
Future Vol, veh/h	45	60	0	5	20	530	0	0	1	210	3	10
Conflicting Peds, #/hr	0	0	0	0	0	53	0	0	10	10	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	4	4	4
Mvmt Flow	50	67	0	6	22	589	0	0	1	233	3	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	834	486	9	519	491	64	14	0	0	11	0	0
Stage 1	475	475	-	11	11	-	-	-	-	-	-	-
Stage 2	359	11	-	508	480	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.5	6.2	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4	3.3	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	288	481	1073	471	481	1006	1617	-	-	1595	-	-
Stage 1	570	557	-	1015	890	-	-	-	-	-	-	-
Stage 2	659	886	-	551	558	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	88	405	1073	362	405	946	1617	-	-	1580	-	-
Mov Cap-2 Maneuver	88	405	-	362	405	-	-	-	-	-	-	-
Stage 1	570	474	-	1005	881	-	-	-	-	-	-	-
Stage 2	230	877	-	403	475	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	72.9		17.6		0		7.2	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1617	-	-	159 890	1580	-	-
HCM Lane V/C Ratio	-	-	-	0.734 0.693	0.148	-	-
HCM Control Delay (s)	0	-	-	72.9 17.6	7.7	0	-
HCM Lane LOS	A	-	-	F C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	4.5 5.8	0.5	-	-

Intersection

Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	140	10	90	215	35	30
Future Vol, veh/h	140	10	90	215	35	30
Conflicting Peds, #/hr	0	11	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	1	0	0	2	2
Mvmt Flow	156	11	100	239	39	33

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	334	234	0
Stage 1	223	-	-
Stage 2	111	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	663	808	-
Stage 1	816	-	-
Stage 2	916	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	639	797	-
Mov Cap-2 Maneuver	639	-	-
Stage 1	814	-	-
Stage 2	886	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	4.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	648	1214
HCM Lane V/C Ratio	-	-	0.257	0.032
HCM Control Delay (s)	-	-	12.5	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1	0.1

3: Hanover St/Hanover St Ext & North Site Driveway HCM 6th TWSC

2035 Build
Weekday AM

Intersection

Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	30	10	90	35	10
Future Vol, veh/h	15	30	10	90	35	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	33	11	100	39	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	167	45	50	0	0
Stage 1	45	-	-	-	-
Stage 2	122	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	823	1025	1557	-	-
Stage 1	977	-	-	-	-
Stage 2	903	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	817	1025	1557	-	-
Mov Cap-2 Maneuver	817	-	-	-	-
Stage 1	970	-	-	-	-
Stage 2	903	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1557	-	945	-	-
HCM Lane V/C Ratio	0.007	-	0.053	-	-
HCM Control Delay (s)	7.3	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

4: Heater Rd/Mt Support Rd & Hanover St Ext
HCM 6th TWSC

2035 Build
Weekday AM

Intersection

Int Delay, s/veh 2.3

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	95	5	1	235	200	35
Future Vol, veh/h	95	5	1	235	200	35
Conflicting Peds, #/hr	0	1	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	90	90	90	90
Heavy Vehicles, %	0	0	5	5	4	4
Mvmt Flow	103	5	1	261	222	39

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	513	251	269	0	-	0
Stage 1	250	-	-	-	-	-
Stage 2	263	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.245	-	-	-
Pot Cap-1 Maneuver	525	793	1277	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	516	786	1267	-	-	-
Mov Cap-2 Maneuver	516	-	-	-	-	-
Stage 1	789	-	-	-	-	-
Stage 2	780	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1267	-	525	-	-
HCM Lane V/C Ratio	0.001	-	0.207	-	-
HCM Control Delay (s)	7.8	0	13.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection

Intersection Delay, s/veh 15
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	135	100	85	75	50	95	180	50	30	170	1
Future Vol, veh/h	3	135	100	85	75	50	95	180	50	30	170	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	4	4	4	2	2	2	4	4	4	6	6	6
Mvmt Flow	3	150	111	94	83	56	106	200	56	33	189	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	13.9			13.6			17.6			13.5		
HCM LOS	B			B			C			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	1%	40%	15%
Vol Thru, %	55%	57%	36%	85%
Vol Right, %	15%	42%	24%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	325	238	210	201
LT Vol	95	3	85	30
Through Vol	180	135	75	170
RT Vol	50	100	50	1
Lane Flow Rate	361	264	233	223
Geometry Grp	1	1	1	1
Degree of Util (X)	0.6	0.445	0.407	0.394
Departure Headway (Hd)	5.981	6.059	6.273	6.354
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	603	592	574	565
Service Time	4.023	4.107	4.321	4.403
HCM Lane V/C Ratio	0.599	0.446	0.406	0.395
HCM Control Delay	17.6	13.9	13.6	13.5
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	4	2.3	2	1.9

6: Route 120 & Old Etna Rd/Etna Rd Queues

2035 Build
Weekday AM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	167	56	83	205	37	79	56	2783	372	61	934
v/c Ratio	1.30	0.22	0.30	0.86	0.29	0.25	0.54	1.25	0.31	0.61	0.43
Control Delay	230.9	63.6	10.1	95.9	67.8	15.3	82.5	142.9	1.5	89.2	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	230.9	63.6	10.1	95.9	67.8	15.3	82.5	142.9	1.5	89.2	13.9
Queue Length 50th (ft)	~194	25	0	96	33	7	50	~1674	9	55	213
Queue Length 95th (ft)	#347	49	40	#168	71	54	97	#1791	23	105	266
Internal Link Dist (ft)		539			473			1647			1282
Turn Bay Length (ft)	65			300		75	350		325	300	
Base Capacity (vph)	128	256	300	237	129	331	126	2225	1198	113	2183
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.30	0.22	0.28	0.86	0.29	0.24	0.44	1.25	0.31	0.54	0.43

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2035 Build
Weekday AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 				 			 	
Traffic Volume (vph)	150	50	75	195	35	75	50	2505	335	55	745	95
Future Volume (vph)	150	50	75	195	35	75	50	2505	335	55	745	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	3330	1807	1536	1770	3539	1583	1770	3471	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	3592	1607	3330	1807	1536	1770	3539	1583	1770	3471	
Peak-hour factor, PHF	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	56	83	205	37	79	56	2783	372	61	828	106
RTOR Reduction (vph)	0	0	72	0	0	58	0	0	89	0	7	0
Lane Group Flow (vph)	167	56	11	205	37	21	56	2783	283	61	927	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3	3 1	4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	10.0	10.0	18.2	10.0	10.0	24.0	8.2	88.0	98.0	8.0	87.8	
Effective Green, g (s)	10.0	10.0	18.2	10.0	10.0	24.0	8.2	88.0	98.0	8.0	87.8	
Actuated g/C Ratio	0.07	0.07	0.13	0.07	0.07	0.17	0.06	0.63	0.70	0.06	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	128	256	208	237	129	263	103	2224	1108	101	2176	
v/s Ratio Prot	c0.09	0.02	0.01	c0.06	0.02	0.01	0.03	c0.79	0.18	c0.03	0.27	
v/s Ratio Perm												
v/c Ratio	1.30	0.22	0.05	0.86	0.29	0.08	0.54	1.25	0.26	0.60	0.43	
Uniform Delay, d1	65.0	61.3	53.3	64.3	61.6	48.7	64.1	26.0	7.7	64.5	13.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	182.4	0.2	0.0	25.6	0.4	0.0	3.1	117.0	0.0	6.8	0.6	
Delay (s)	247.4	61.5	53.4	89.9	62.1	48.8	67.2	143.0	7.7	71.3	13.9	
Level of Service	F	E	D	F	E	D	E	F	A	E	B	
Approach Delay (s)		160.7			76.6			126.0			17.4	
Approach LOS		F			E			F			B	
Intersection Summary												
HCM 2000 Control Delay			102.6									
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			97.2%									
Analysis Period (min)			15									
c Critical Lane Group												

6: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2035 Build
Weekday AM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	16	92	16	16	15	93
Maximum Split (%)	11.4%	65.7%	11.4%	11.4%	10.7%	66.4%
Minimum Split (s)	15	16	15	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	20	36	128	4	20	35
End Time (s)	36	128	4	20	35	128
Yield/Force Off (s)	30	122	138	14	29	122
Yield/Force Off 170(s)	30	122	138	14	29	122
Local Start Time (s)	38	54	6	22	38	53
Local Yield (s)	48	0	16	32	47	0
Local Yield 170(s)	48	0	16	32	47	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 150
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
16 s	92 s	16 s	16 s
 Ø5	 Ø6		
15 s	93 s		

Intersection

Int Delay, s/veh 99.1

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations		↗	↘	↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	310	560	3230	1335	85
Future Vol, veh/h	0	310	560	3230	1335	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	93	93
Heavy Vehicles, %	1	1	2	2	4	4
Mvmt Flow	0	344	622	3589	1435	91

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	-	763	1526	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	5.34	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	3.12	-	-	-
Pot Cap-1 Maneuver	0	~ 299	~ 216	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	~ 299	~ 216	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	137.3	131.9	0
HCM LOS	F		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	~ 216	-	299	-	-
HCM Lane V/C Ratio	2.881	-	1.152	-	-
HCM Control Delay (s)	\$ 892.8	-	137.3	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	55	-	14.6	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh	8.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	30	0	1	45	85	0	5	5	95	5	25
Future Vol, veh/h	20	30	0	1	45	85	0	5	5	95	5	25
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	0	0	0
Mvmt Flow	22	33	0	1	50	94	0	6	6	106	6	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	316	244	20	258	255	12	34	0	0	12	0	0
Stage 1	232	232	-	9	9	-	-	-	-	-	-	-
Stage 2	84	12	-	249	246	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	637	658	1058	695	649	1069	1591	-	-	1620	-	-
Stage 1	771	713	-	1012	888	-	-	-	-	-	-	-
Stage 2	924	886	-	755	703	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	515	614	1058	632	606	1066	1591	-	-	1620	-	-
Mov Cap-2 Maneuver	515	614	-	632	606	-	-	-	-	-	-	-
Stage 1	771	665	-	1012	888	-	-	-	-	-	-	-
Stage 2	792	886	-	669	656	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	10.2	0	5.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	570 842	1620	-	-
HCM Lane V/C Ratio	-	-	-	0.097 0.173	0.065	-	-
HCM Control Delay (s)	0	-	-	12 10.2	7.4	0	-
HCM Lane LOS	A	-	-	B B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.6	0.2	-	-

Intersection

Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	25	25	80	20	45
Future Vol, veh/h	55	25	25	80	20	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	61	28	28	89	22	50

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	167	73	0
Stage 1	73	-	-
Stage 2	94	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	828	995	-
Stage 1	955	-	-
Stage 2	935	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	816	995	-
Mov Cap-2 Maneuver	816	-	-
Stage 1	955	-	-
Stage 2	921	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	865	1484
HCM Lane V/C Ratio	-	-	0.103	0.015
HCM Control Delay (s)	-	-	9.6	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0

3: Hanover St/Hanover St Ext & North Site Driveway HCM 6th TWSC

2035 Build
Weekday PM

Intersection

Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	25	25	50	20
Future Vol, veh/h	5	15	25	25	50	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	17	28	28	56	22

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	151	67	78	0	0
Stage 1	67	-	-	-	-
Stage 2	84	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	841	997	1520	-	-
Stage 1	956	-	-	-	-
Stage 2	939	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	825	997	1520	-	-
Mov Cap-2 Maneuver	825	-	-	-	-
Stage 1	938	-	-	-	-
Stage 2	939	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	3.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1520	-	948	-	-
HCM Lane V/C Ratio	0.018	-	0.023	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

4: Heater Rd/Mt Support Rd & Hanover St Ext
HCM 6th TWSC

2035 Build
Weekday PM

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	25	1	1	195	390	60
Future Vol, veh/h	25	1	1	195	390	60
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	97	97	90	90
Heavy Vehicles, %	0	0	6	6	3	3
Mvmt Flow	28	1	1	201	433	67

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	671	468	501	0	-	0
Stage 1	468	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.16	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.254	-	-	-
Pot Cap-1 Maneuver	425	599	1043	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	424	598	1042	-	-	-
Mov Cap-2 Maneuver	424	-	-	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	14	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1042	-	429	-	-
HCM Lane V/C Ratio	0.001	-	0.067	-	-
HCM Control Delay (s)	8.5	0	14	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Intersection Delay, s/veh 14.5
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	55	45	125	55	35	25	155	70	20	350	5
Future Vol, veh/h	3	55	45	125	55	35	25	155	70	20	350	5
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	3	3	3
Mvmt Flow	3	61	50	132	58	37	28	172	78	22	389	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	10.6			12.9			12.8			17.5		
HCM LOS	B			B			B			C		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	3%	58%	5%
Vol Thru, %	62%	53%	26%	93%
Vol Right, %	28%	44%	16%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	103	215	375
LT Vol	25	3	125	20
Through Vol	155	55	55	350
RT Vol	70	45	35	5
Lane Flow Rate	278	114	226	417
Geometry Grp	1	1	1	1
Degree of Util (X)	0.428	0.192	0.381	0.632
Departure Headway (Hd)	5.547	6.029	6.063	5.457
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	644	589	588	658
Service Time	3.62	4.121	4.143	3.52
HCM Lane V/C Ratio	0.432	0.194	0.384	0.634
HCM Control Delay	12.8	10.6	12.9	17.5
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	2.1	0.7	1.8	4.5

6: Route 120 & Old Etna Rd/Etna Rd
Queues

2035 Build
Weekday PM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	94	33	72	317	11	67	16	904	149	67	2273
v/c Ratio	0.78	0.14	0.30	0.97	0.06	0.18	0.21	0.42	0.13	0.59	1.00
Control Delay	101.4	62.4	11.9	104.5	59.0	10.2	70.7	16.0	0.8	83.4	45.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.4	62.4	11.9	104.5	59.0	10.2	70.7	16.0	0.8	83.4	45.8
Queue Length 50th (ft)	85	15	1	~152	9	0	14	223	0	60	~1158
Queue Length 95th (ft)	#177	33	39	#254	30	39	40	278	10	112	#1316
Internal Link Dist (ft)		539			473			1647			1282
Turn Bay Length (ft)	65			300		75	350		325	300	
Base Capacity (vph)	128	256	278	328	178	396	114	2144	1158	140	2264
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.13	0.26	0.97	0.06	0.17	0.14	0.42	0.13	0.48	1.00

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2035 Build
Weekday PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 				 			 	
Traffic Volume (vph)	85	30	65	285	10	60	15	850	140	65	2115	90
Future Volume (vph)	85	30	65	285	10	60	15	850	140	65	2115	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1796	3592	1607	3397	1843	1567	1787	3574	1599	1787	3549	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1796	3592	1607	3397	1843	1567	1787	3574	1599	1787	3549	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94	0.97	0.97	0.97
Adj. Flow (vph)	94	33	72	317	11	67	16	904	149	67	2180	93
RTOR Reduction (vph)	0	0	63	0	0	53	0	0	45	0	2	0
Lane Group Flow (vph)	94	33	9	317	11	14	16	904	104	67	2271	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3	3 1	4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	9.5	9.5	14.5	13.5	13.5	28.5	5.0	84.0	97.5	9.0	88.0	
Effective Green, g (s)	9.5	9.5	14.5	13.5	13.5	28.5	5.0	84.0	97.5	9.0	88.0	
Actuated g/C Ratio	0.07	0.07	0.10	0.10	0.10	0.20	0.04	0.60	0.70	0.06	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	121	243	166	327	177	318	63	2144	1113	114	2230	
v/s Ratio Prot	c0.05	0.01	0.01	c0.09	0.01	0.01	0.01	0.25	0.06	c0.04	c0.64	
v/s Ratio Perm												
v/c Ratio	0.78	0.14	0.06	0.97	0.06	0.04	0.25	0.42	0.09	0.59	1.02	
Uniform Delay, d1	64.2	61.4	56.6	63.0	57.5	44.8	65.7	15.0	6.9	63.7	26.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	24.2	0.1	0.1	40.8	0.1	0.0	0.8	0.6	0.0	4.9	23.8	
Delay (s)	88.4	61.5	56.6	103.9	57.5	44.8	66.5	15.6	6.9	68.6	49.8	
Level of Service	F	E	E	F	E	D	E	B	A	E	D	
Approach Delay (s)		72.4			92.6			15.2			50.4	
Approach LOS		E			F			B			D	
Intersection Summary												
HCM 2000 Control Delay			46.2									
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			88.6%									
Analysis Period (min)			15									
c Critical Lane Group												

6: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2035 Build
Weekday PM

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	15	90	16	19	17	88
Maximum Split (%)	10.7%	64.3%	11.4%	13.6%	12.1%	62.9%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	23	38	128	4	23	40
End Time (s)	38	128	4	23	40	128
Yield/Force Off (s)	32	122	138	17	34	122
Yield/Force Off 170(s)	32	122	138	17	34	122
Local Start Time (s)	41	56	6	22	41	58
Local Yield (s)	50	0	16	35	52	0
Local Yield 170(s)	50	0	16	35	52	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 150
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	90 s	16 s	19 s
 Ø5	 Ø6		
17 s	88 s		

Intersection

Int Delay, s/veh 122.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↑↑↑	↑↑↑	
Traffic Vol, veh/h	0	195	145	1265	3125	15
Future Vol, veh/h	0	195	145	1265	3125	15
Conflicting Peds, #/hr	0	0	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	98	98	93	93
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	0	217	148	1291	3360	16

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	- 1689	3377	0 - 0
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	- 7.1	5.34	- - -
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	- 3.9	3.12	- - -
Pot Cap-1 Maneuver	0 ~ 72	~ 24	- - -
Stage 1	0	-	- - -
Stage 2	0	-	- - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	- ~ 72	~ 24	- - -
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	NB	SB
HCM Control Delay, \$	1028.7	272.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	~ 24	-	72	-	-
HCM Lane V/C Ratio	6.165	-	3.009	-	-
HCM Control Delay (s)	\$ 2646.3	\$	1028.7	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	18.5	-	21.8	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	35	0	0	40	35	0	0	1	20	1	20
Future Vol, veh/h	25	35	0	0	40	35	0	0	1	20	1	20
Conflicting Peds, #/hr	0	0	0	0	0	9	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	28	39	0	0	44	39	0	0	1	22	1	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	107	57	12	77	68	10	23	0	0	1	0	0
Stage 1	56	56	-	1	1	-	-	-	-	-	-	-
Stage 2	51	1	-	76	67	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	872	834	1069	917	826	1077	1605	-	-	1635	-	-
Stage 1	956	848	-	1027	899	-	-	-	-	-	-	-
Stage 2	962	895	-	938	843	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	790	822	1069	875	814	1068	1605	-	-	1635	-	-
Mov Cap-2 Maneuver	790	822	-	875	814	-	-	-	-	-	-	-
Stage 1	956	836	-	1027	899	-	-	-	-	-	-	-
Stage 2	874	895	-	882	831	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	9.3	0	3.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1605	-	-	808 916	1635	-	-
HCM Lane V/C Ratio	-	-	-	0.083 0.091	0.014	-	-
HCM Control Delay (s)	0	-	-	9.9 9.3	7.2	0	-
HCM Lane LOS	A	-	-	A A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.3	0	-	-

Intersection

Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	20	25	35	20	15
Future Vol, veh/h	25	20	25	35	20	15
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	28	22	28	39	22	17

Major/Minor	Minor1	Major1		Major2	
Conflicting Flow All	109	50	0	0	67
Stage 1	48	-	-	-	-
Stage 2	61	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	893	1024	-	-	1547
Stage 1	980	-	-	-	-
Stage 2	967	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	880	1022	-	-	1547
Mov Cap-2 Maneuver	880	-	-	-	-
Stage 1	980	-	-	-	-
Stage 2	953	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	4.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	938	1547
HCM Lane V/C Ratio	-	-	0.053	0.014
HCM Control Delay (s)	-	-	9.1	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0

3: Hanover St/Hanover St Ext & North Site Driveway HCM 6th TWSC

2035 Build
Sat MIDDAY

Intersection

Int Delay, s/veh	3.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	20	20	25	15	20
Future Vol, veh/h	10	20	20	25	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	22	22	28	17	22

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	100	28	39	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	72	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	899	1047	1571	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	886	1047	1571	-	-	-
Mov Cap-2 Maneuver	886	-	-	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	951	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	3.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1571	-	987	-	-
HCM Lane V/C Ratio	0.014	-	0.034	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

4: Heater Rd/Mt Support Rd & Hanover St Ext
HCM 6th TWSC

2035 Build
Sat MIDDAY

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	30	0	0	60	80	30
Future Vol, veh/h	30	0	0	60	80	30
Conflicting Peds, #/hr	3	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	33	0	0	67	89	33

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	176	109	122	0	-	0
Stage 1	106	-	-	-	-	-
Stage 2	70	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	818	950	1478	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	818	947	1478	-	-	-
Mov Cap-2 Maneuver	818	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	958	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1478	-	818	-	-
HCM Lane V/C Ratio	-	-	0.041	-	-
HCM Control Delay (s)	0	-	9.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection

Intersection Delay, s/veh 8
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	55	5	60	45	10	5	50	30	2	70	0
Future Vol, veh/h	0	55	5	60	45	10	5	50	30	2	70	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	61	6	67	50	11	6	56	33	2	78	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	8.3	7.8	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	0%	52%	3%
Vol Thru, %	59%	92%	39%	97%
Vol Right, %	35%	8%	9%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	60	115	72
LT Vol	5	0	60	2
Through Vol	50	55	45	70
RT Vol	30	5	10	0
Lane Flow Rate	94	67	128	80
Geometry Grp	1	1	1	1
Degree of Util (X)	0.111	0.081	0.157	0.099
Departure Headway (Hd)	4.236	4.385	4.419	4.454
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	848	819	814	806
Service Time	2.251	2.4	2.432	2.469
HCM Lane V/C Ratio	0.111	0.082	0.157	0.099
HCM Control Delay	7.8	7.8	8.3	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.3	0.6	0.3

6: Route 120 & Old Etna Rd/Etna Rd
Queues

2035 Build
Sat Midday

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	67	6	17	111	6	28	11	644	100	36	620
v/c Ratio	0.55	0.02	0.07	0.52	0.05	0.09	0.15	0.26	0.08	0.38	0.25
Control Delay	78.7	58.6	0.6	71.5	60.8	0.6	69.0	11.3	0.9	75.0	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.7	58.6	0.6	71.5	60.8	0.6	69.0	11.3	0.9	75.0	9.5
Queue Length 50th (ft)	60	2	0	51	5	0	10	126	0	32	113
Queue Length 95th (ft)	109	10	0	82	20	0	32	193	9	69	173
Internal Link Dist (ft)		539			473			1647			1282
Turn Bay Length (ft)	65			300		75	350		325	300	
Base Capacity (vph)	266	533	420	424	230	392	167	2431	1316	204	2474
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.01	0.04	0.26	0.03	0.07	0.07	0.26	0.08	0.18	0.25
Intersection Summary											

6: Route 120 & Old Etna Rd/Etna Rd

HCM Signalized Intersection Capacity Analysis

2035 Build
Sat MIDDAY

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 				 			 	
Traffic Volume (vph)	60	5	15	100	5	25	10	580	90	35	545	50
Future Volume (vph)	60	5	15	100	5	25	10	580	90	35	545	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			6%			0%			0%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1778	3556	1591	3298	1789	1521	1805	3610	1615	1787	3523	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1778	3556	1591	3298	1789	1521	1805	3610	1615	1787	3523	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96
Adj. Flow (vph)	67	6	17	111	6	28	11	644	100	36	568	52
RTOR Reduction (vph)	0	0	16	0	0	24	0	0	28	0	3	0
Lane Group Flow (vph)	67	6	1	111	6	4	11	644	72	36	617	0
Confl. Peds. (#/hr)							1		1	1		1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	0%	0%	0%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	3	3	3 1	4	4	4 5	1	6	6 4	5	2	
Permitted Phases												
Actuated Green, G (s)	8.6	8.6	12.3	9.1	9.1	21.5	3.7	91.9	101.0	6.4	94.6	
Effective Green, g (s)	8.6	8.6	12.3	9.1	9.1	21.5	3.7	91.9	101.0	6.4	94.6	
Actuated g/C Ratio	0.06	0.06	0.09	0.06	0.06	0.15	0.03	0.66	0.72	0.05	0.68	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	109	218	139	214	116	233	47	2369	1165	81	2380	
v/s Ratio Prot	c0.04	0.00	0.00	c0.03	0.00	0.00	0.01	c0.18	0.04	c0.02	c0.18	
v/s Ratio Perm												
v/c Ratio	0.61	0.03	0.01	0.52	0.05	0.02	0.23	0.27	0.06	0.44	0.26	
Uniform Delay, d1	64.1	61.8	58.3	63.3	61.4	50.3	66.8	10.1	5.7	65.1	8.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.0	0.0	0.0	0.9	0.1	0.0	0.9	0.3	0.0	1.4	0.3	
Delay (s)	71.1	61.8	58.3	64.2	61.5	50.3	67.7	10.3	5.7	66.5	9.2	
Level of Service	E	E	E	E	E	D	E	B	A	E	A	
Approach Delay (s)		68.1			61.4			10.6			12.3	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			18.9									
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			45.8%									
Analysis Period (min)			15									
c Critical Lane Group												

6: Route 120 & Old Etna Rd/Etna Rd
Timing Report, Sorted By Phase

2035 Build
Sat MIDDAY

						
Phase Number	1	2	3	4	5	6
Movement	NBL	SBT	EBTL	WBTL	SBL	NBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						
Recall Mode	None	C-Max	None	None	None	Max
Maximum Split (s)	19	70	27	24	22	67
Maximum Split (%)	13.6%	50.0%	19.3%	17.1%	15.7%	47.9%
Minimum Split (s)	15	16	16	16	15	16
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	5	9	5	5	5	10
Vehicle Extension (s)	2	3	2	2	2	3
Minimum Gap (s)	2	3	2	2	2	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)						
Flash Dont Walk (s)						
Dual Entry	No	Yes	No	No	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	39	58	128	15	39	61
End Time (s)	58	128	15	39	61	128
Yield/Force Off (s)	52	122	9	33	55	122
Yield/Force Off 170(s)	52	122	9	33	55	122
Local Start Time (s)	57	76	6	33	57	79
Local Yield (s)	70	0	27	51	73	0
Local Yield 170(s)	70	0	27	51	73	0

Intersection Summary

Cycle Length 140
Control Type Actuated-Coordinated
Natural Cycle 65
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	70 s	27 s	24 s
 Ø5	 Ø6		
22 s	67 s		

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	0	75	75	875	870	5
Future Vol, veh/h	0	75	75	875	870	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	450	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	96	96	97	97
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	0	83	78	911	897	5

Major/Minor	Minor2	Major1	Major2
-------------	--------	--------	--------

Conflicting Flow All	-	451	902	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	2.21	-	-	-
Pot Cap-1 Maneuver	0	561	756	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	561	756	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
----------	----	----	----

HCM Control Delay, s	12.5	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
-----------------------	-----	-----	-------	-----	-----

Capacity (veh/h)	756	-	561	-	-
HCM Lane V/C Ratio	0.103	-	0.149	-	-
HCM Control Delay (s)	10.3	-	12.5	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.5	-	-

2034 Build Analysis Worksheets with Improvements

Intersection

Intersection Delay, s/veh 15.3
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	60	0	5	20	530	0	0	1	210	3	10
Future Vol, veh/h	45	60	0	5	20	530	0	0	1	210	3	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	4	4	4
Mvmt Flow	50	67	0	6	22	589	0	0	1	233	3	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.7			17.5			8.5			12.6		
HCM LOS	A			C			A			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	43%	1%	94%
Vol Thru, %	0%	57%	4%	1%
Vol Right, %	100%	0%	95%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	105	555	223
LT Vol	0	45	5	210
Through Vol	0	60	20	3
RT Vol	1	0	530	10
Lane Flow Rate	1	117	617	248
Geometry Grp	1	1	1	1
Degree of Util (X)	0.002	0.179	0.721	0.4
Departure Headway (Hd)	5.481	5.514	4.211	5.805
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	654	652	851	624
Service Time	3.502	3.536	2.292	3.811
HCM Lane V/C Ratio	0.002	0.179	0.725	0.397
HCM Control Delay	8.5	9.7	17.5	12.6
HCM Lane LOS	A	A	C	B
HCM 95th-tile Q	0	0.6	6.4	1.9

Intersection

Intersection Delay, s/veh 8
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	30	0	1	45	85	0	5	5	95	5	25
Future Vol, veh/h	20	30	0	1	45	85	0	5	5	95	5	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	0	0	0
Mvmt Flow	22	33	0	1	50	94	0	6	6	106	6	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	7.9			7.7			7.3			8.3		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	40%	1%	76%
Vol Thru, %	50%	60%	34%	4%
Vol Right, %	50%	0%	65%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	50	131	125
LT Vol	0	20	1	95
Through Vol	5	30	45	5
RT Vol	5	0	85	25
Lane Flow Rate	11	56	146	139
Geometry Grp	1	1	1	1
Degree of Util (X)	0.013	0.07	0.16	0.169
Departure Headway (Hd)	4.185	4.504	3.954	4.387
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	857	798	910	822
Service Time	2.201	2.516	1.964	2.387
HCM Lane V/C Ratio	0.013	0.07	0.16	0.169
HCM Control Delay	7.3	7.9	7.7	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.6	0.6

Intersection

Intersection Delay, s/veh 7.3
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	35	0	0	40	35	0	0	1	20	1	20
Future Vol, veh/h	25	35	0	0	40	35	0	0	1	20	1	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	28	39	0	0	44	39	0	0	1	22	1	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	7.5			7.1			6.7			7.2		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	42%	0%	49%
Vol Thru, %	0%	58%	53%	2%
Vol Right, %	100%	0%	47%	49%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	60	75	41
LT Vol	0	25	0	20
Through Vol	0	35	40	1
RT Vol	1	0	35	20
Lane Flow Rate	1	67	83	46
Geometry Grp	1	1	1	1
Degree of Util (X)	0.001	0.077	0.087	0.05
Departure Headway (Hd)	3.592	4.161	3.75	3.963
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	984	860	953	896
Service Time	1.66	2.192	1.785	2.022
HCM Lane V/C Ratio	0.001	0.078	0.087	0.051
HCM Control Delay	6.7	7.5	7.1	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.3	0.2

School Dismissal Condition Data

Weekday Afternoon Student Dismissal Peak Analysis Summary

- The Hanover Street intersections with Evans Drive and with Old Etna Road have localized afternoon peaks that correspond with school dismissal times (2:00-3:00 PM and 2:15-3:15 PM).
- A limited review of the school dismissal time at the above listed two intersections was completed.
- **2022 Existing Traffic Volumes:**
 - Adjustment factors based on the methodology presented within the body of the traffic study:
 - Seasonal Adjustment = November 2022 traffic counts increased by 13%.
 - Pandemic Adjustment = 2022 peak month traffic volumes increased by 5.4%.
- **2025 No-Build Traffic Volumes:**
 - Historical Growth = increased 2022 Existing traffic volumes along NH Route 120 by a 1% compounded annual growth rate.
 - Background Developments: the Dartmouth Health patient tower expansion project, the Marek at Lebanon, NH multifamily development (343 Mount Support Road), and the apartment development to be constructed at 402 Mount Support Road.
- **2025 Build Traffic Volumes:**
 - ITE has vehicle time of day distributions for Land Use Code 221 – Multifamily Housing (Mid-Rise) that identify the percentage of daily traffic that is distributed to each hour of the day. During the weekday afternoon student dismissal peak, the following site trips were estimated for the proposed development:

Table A-1 Trip-Generation Summary

Peak Hour/Direction	Apartment Trips ^a
Weekday PM School Dismissal Peak Hour	
Enter	45
Exit	41
Total	86

a ITE Land Use Code 221 (Multifamily Housing [Mid-Rise]) for 474 dwelling units.

- Trips were distributed using the same methodology as the within the body of the traffic study.
 - The project-generated traffic volumes were combined with the No-Build traffic volumes to develop the Build peak-hour traffic-volume networks
- Intersections were analyzed for their operations under 2025 traffic volume conditions during the student dismissal peak as shown in Table A-2.
 - Operations are a LOS B or better for all movements at the two existing Hanover Street intersections as well as at the proposed north site driveway.

Table A-2 Capacity Analysis Summary 2025 Opening Year Conditions – Student Dismissal Peak

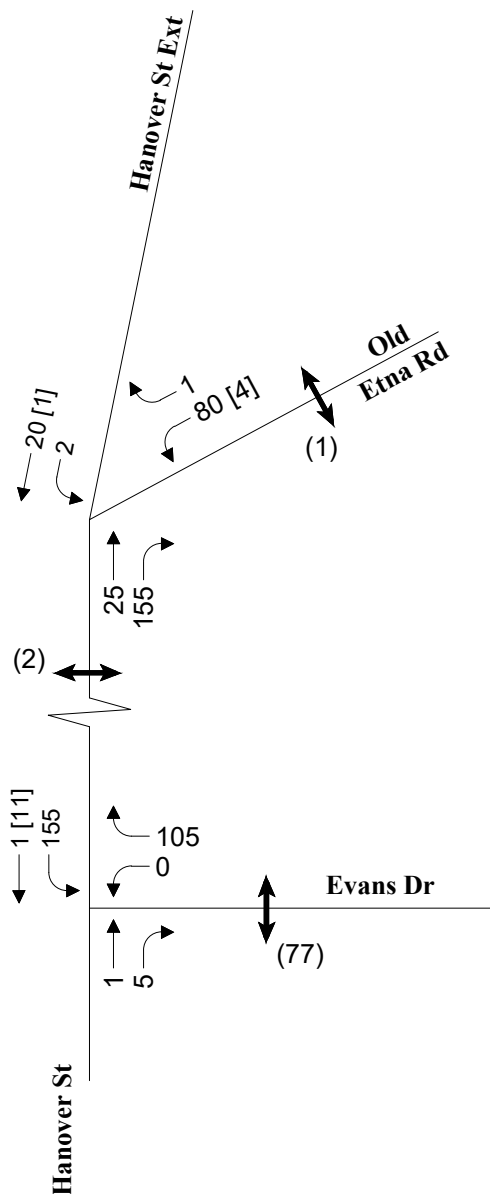
Intersection/Critical Movement	2025 No-Build					2025 Build				
	v/c	Delay	LOS	50th % Queue	95th % Queue	v/c	Delay	LOS	50th % Queue	95th % Queue
Hanover Street and Evans Drive ^a										
South Site Driveway EB Approach	--	--	--	--	--	0.08	15.0	B	--	8
Evans Dr WB Approach	0.12	8.8	A	--	10	0.18	10.0	B	--	15
Hanover St NB Left	--	--	--	--	--	--	--	--	--	--
Hanover St SB Left	0.13	7.6	A	--	12	0.13	7.6	A	--	12
Hanover Street and Old Etna Road										
Old Etna Rd WB Approach	0.13	10.2	B	--	10	0.16	10.7	B	--	15
Hanover St SB Left	0.00	7.8	A	--	0	0.01	7.9	A	--	0
Hanover Street and North Site Driveway										
North Site Driveway EB Approach	--	--	--	--	--	0.02	8.7	A	--	2
Hanover St NB Left	--	--	--	--	--	0.01	7.3	A	--	0

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

a No vehicles were counted or projected on the Hanover Street northbound left-turn movement and no site trips were assigned to this movement.



LEGEND

XX = Vehicles
(XX) = Pedestrians
[XX] = Bicycles

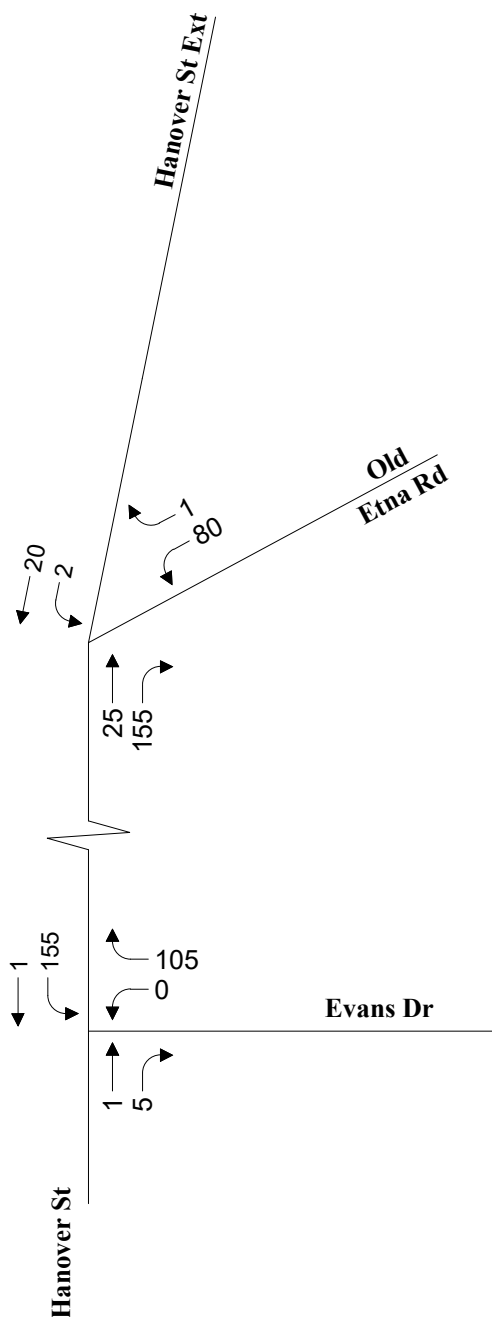


Not to Scale



2022 Existing Weekday Afternoon
Peak Hour Traffic Volumes

Figure A-1



Not to Scale



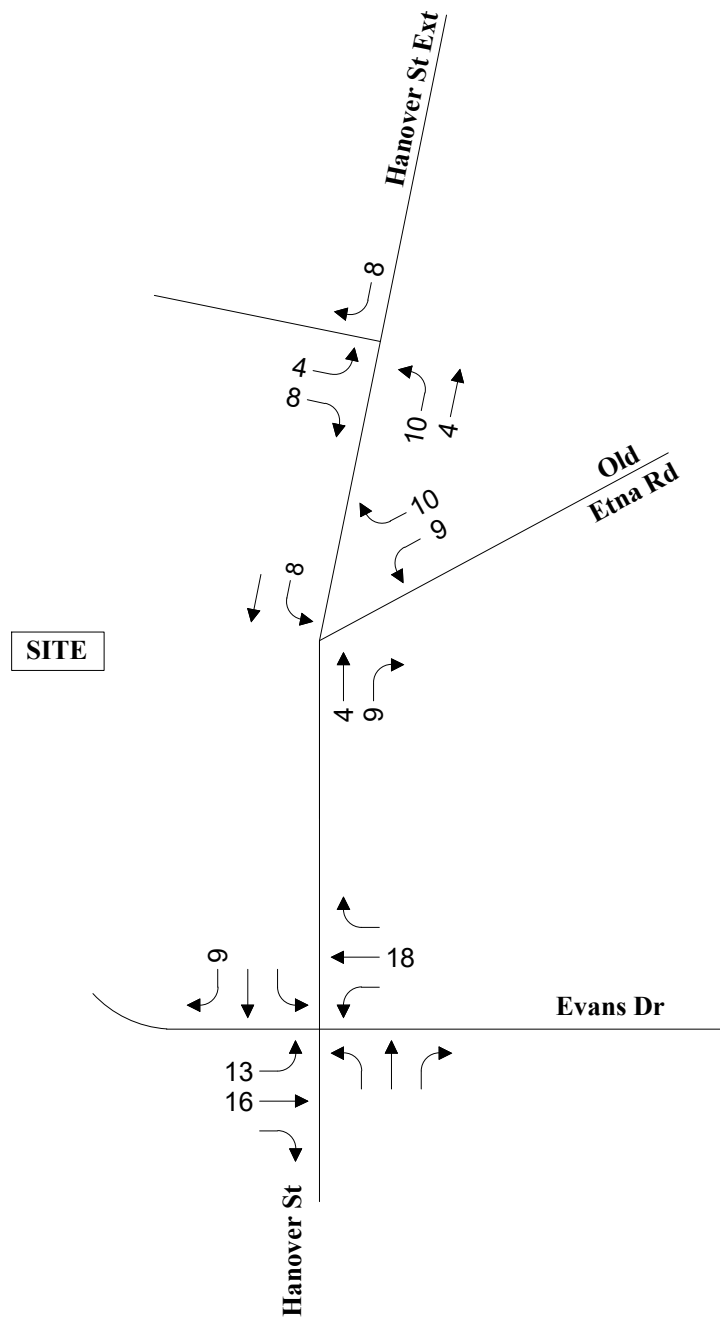
2025 No-Build Weekday Afternoon
School Dismissal
Peak Hour Traffic Volumes

Figure A-2

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use						
Source: ITE Trip Generation Manual, 11th Edition						
Land Use Code	221			221		
Land Use	Multifamily Housing (Mid-Rise)			Multifamily Housing (Mid-Rise)		
Subcategory	Not Close to Rail transit			Not Close to Rail transit		
Setting	General Urban/Suburban			General Urban/Suburban		
Time Period	Weekday			Saturday		
# Data Sites	6			1		
	% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting	Total	Entering	Exiting
12:00 - 1:00 AM	0.8%	1.2%	0.4%	1.8%	2.8%	0.8%
1:00 - 2:00 AM	0.4%	0.6%	0.3%	0.3%	0.4%	0.2%
2:00 - 3:00 AM	0.2%	0.3%	0.1%	0.5%	0.9%	0.2%
3:00 - 4:00 AM	0.2%	0.2%	0.2%	1.7%	2.4%	1.0%
4:00 - 5:00 AM	0.3%	0.1%	0.5%	0.3%	0.4%	0.2%
5:00 - 6:00 AM	1.2%	0.4%	2.0%	0.2%	0.2%	0.2%
6:00 - 7:00 AM	4.4%	1.0%	7.8%	1.2%	0.4%	1.9%
7:00 - 8:00 AM	8.6%	2.5%	14.7%	3.5%	3.0%	4.0%
8:00 - 9:00 AM	7.8%	3.0%	12.5%	3.8%	2.8%	4.8%
9:00 - 10:00 AM	4.5%	2.2%	6.9%	5.8%	3.5%	8.1%
10:00 - 11:00 AM	3.7%	2.7%	4.6%	6.4%	5.0%	7.7%
11:00 - 12:00 PM	3.7%	3.4%	4.0%	6.4%	6.1%	6.7%
12:00 - 1:00 PM	4.6%	4.3%	4.8%	6.6%	4.5%	8.5%
1:00 - 2:00 PM	4.4%	4.4%	4.4%	6.2%	6.9%	5.4%
2:00 - 3:00 PM	3.9%	4.1%	3.7%	7.3%	7.1%	7.5%
3:00 - 4:00 PM	4.9%	5.9%	3.8%	6.7%	8.2%	5.2%
4:00 - 5:00 PM	7.2%	9.2%	5.1%	6.2%	6.3%	6.0%
5:00 - 6:00 PM	9.4%	13.1%	5.8%	7.7%	7.8%	7.7%
6:00 - 7:00 PM	9.0%	12.1%	6.0%	6.8%	6.3%	7.3%
7:00 - 8:00 PM	7.4%	9.4%	5.4%	5.4%	6.9%	4.0%
8:00 - 9:00 PM	5.4%	7.7%	3.1%	4.3%	4.5%	4.2%
9:00 - 10:00 PM	4.0%	6.5%	1.5%	4.0%	4.3%	3.7%
10:00 - 11:00 PM	2.6%	3.7%	1.6%	3.9%	4.8%	3.1%
11:00 - 12:00 AM	1.4%	2.1%	0.8%	3.0%	4.3%	1.7%
	100.0%	100.0%	100.0%			

ITE Land Use Code 221: Multifamily Housing (Mid-Rise)
474 dwelling units

Weekday Daily		Saturday Daily	
1,108 vpd enter	1,108 vpd exit	1,032 vpd enter	1,032 vpd exit
13	4	29	9
6	4	4	2
3	1	9	2
3	3	25	11
1	6	4	2
5	23	2	2
11	86	4	19
28	162	31	41
33	139	29	49
24	76	36	84
30	51	51	79
37	44	63	69
48	53	47	88
48	49	71	56
45	41	74	77
66	42	85	54
102	57	65	62
145	64	80	79
134	66	65	75
105	60	71	41
85	35	47	43
72	17	45	39
41	18	49	32
23	9	45	17
1,108	1,108	1,032	1,032

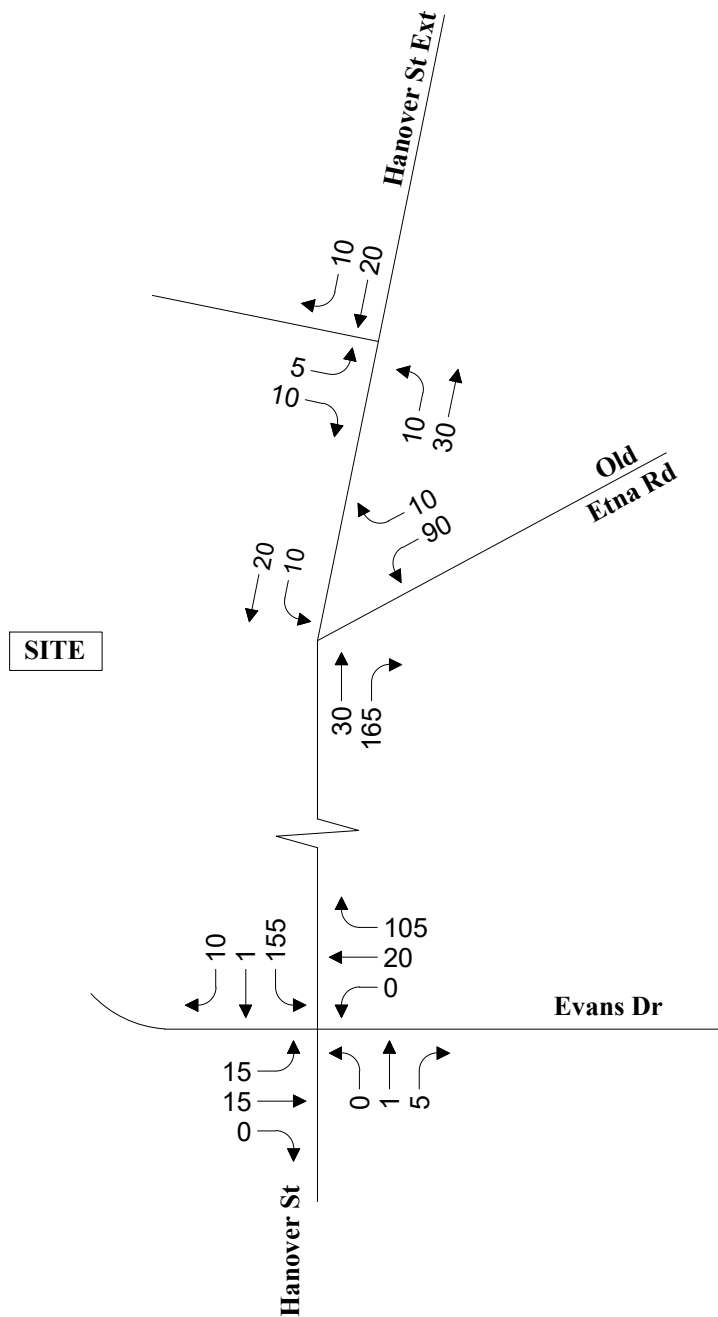


↑
Not to Scale



Site Trips Weekday Afternoon
School Dismissal
Peak Hour Traffic Volumes

Figure A-3



↑
Not to Scale



2025 Build Weekday Afternoon
School Dismissal
Peak Hour Traffic Volumes

Figure A-4

Intersection

Int Delay, s/veh 7.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	105	1	5	155	1
Future Vol, veh/h	0	105	1	5	155	1
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	50	50	73	73
Heavy Vehicles, %	2	2	0	0	0	0
Mvmt Flow	0	130	2	10	212	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	432	10	0
Stage 1	7	-	-
Stage 2	425	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	581	1071	-
Stage 1	1016	-	-
Stage 2	659	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	505	1068	-
Mov Cap-2 Maneuver	505	-	-
Stage 1	1016	-	-
Stage 2	573	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	7.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1068	1620
HCM Lane V/C Ratio	-	-	0.121	0.131
HCM Control Delay (s)	-	-	8.8	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.5

Intersection

Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	1	25	155	2	20
Future Vol, veh/h	80	1	25	155	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	59	59	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	98	1	42	263	3	25

Major/Minor	Minor1	Major1		Major2	
Conflicting Flow All	205	174	0	0	305
Stage 1	174	-	-	-	-
Stage 2	31	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	788	875	-	-	1267
Stage 1	861	-	-	-	-
Stage 2	997	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	786	875	-	-	1267
Mov Cap-2 Maneuver	786	-	-	-	-
Stage 1	861	-	-	-	-
Stage 2	995	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	787	1267
HCM Lane V/C Ratio	-	-	0.126	0.002
HCM Control Delay (s)	-	-	10.2	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection

Int Delay, s/veh 7.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	105	1	5	155	1
Future Vol, veh/h	0	105	1	5	155	1
Conflicting Peds, #/hr	0	3	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	50	50	73	73
Heavy Vehicles, %	2	2	0	0	0	0
Mvmt Flow	0	130	2	10	212	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	432	10	0
Stage 1	7	-	-
Stage 2	425	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	581	1071	-
Stage 1	1016	-	-
Stage 2	659	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	505	1068	-
Mov Cap-2 Maneuver	505	-	-
Stage 1	1016	-	-
Stage 2	573	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	7.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1068	1620
HCM Lane V/C Ratio	-	-	0.121	0.131
HCM Control Delay (s)	-	-	8.8	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.5

Intersection

Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	1	25	155	2	20
Future Vol, veh/h	80	1	25	155	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	59	59	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	98	1	42	263	3	25

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	205	174	0	0	305
Stage 1	174	-	-	-	-
Stage 2	31	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	788	875	-	-	1267
Stage 1	861	-	-	-	-
Stage 2	997	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	786	875	-	-	1267
Mov Cap-2 Maneuver	786	-	-	-	-
Stage 1	861	-	-	-	-
Stage 2	995	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	787	1267
HCM Lane V/C Ratio	-	-	0.126	0.002
HCM Control Delay (s)	-	-	10.2	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection

Int Delay, s/veh 8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	15	0	0	20	105	0	1	5	155	1	10
Future Vol, veh/h	15	15	0	0	20	105	0	1	5	155	1	10
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	81	81	81	50	50	50	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	0	0	0	0	2
Mvmt Flow	17	17	0	0	25	130	0	2	10	212	1	14

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	520	444	8	448	446	10	15	0	0	12	0	0
Stage 1	432	432	-	7	7	-	-	-	-	-	-	-
Stage 2	88	12	-	441	439	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	467	508	1074	521	507	1071	1603	-	-	1620	-	-
Stage 1	602	582	-	1015	890	-	-	-	-	-	-	-
Stage 2	920	886	-	595	578	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	352	441	1074	455	440	1068	1603	-	-	1620	-	-
Mov Cap-2 Maneuver	352	441	-	455	440	-	-	-	-	-	-	-
Stage 1	602	505	-	1015	890	-	-	-	-	-	-	-
Stage 2	784	886	-	499	502	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	10	0	7.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	392	869	1620	-
HCM Lane V/C Ratio	-	-	-	0.085	0.178	0.131	-
HCM Control Delay (s)	0	-	-	15	10	7.6	0
HCM Lane LOS	A	-	-	C	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.6	0.5	-

Intersection

Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	10	30	165	10	20
Future Vol, veh/h	90	10	30	165	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	59	59	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	110	12	51	280	13	25

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	242	191	0
Stage 1	191	-	-
Stage 2	51	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	751	856	-
Stage 1	846	-	-
Stage 2	977	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	743	856	-
Mov Cap-2 Maneuver	743	-	-
Stage 1	846	-	-
Stage 2	966	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	2.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	753	1240
HCM Lane V/C Ratio	-	-	0.162	0.01
HCM Control Delay (s)	-	-	10.7	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	5	10	10	30	20	10
Future Vol, veh/h	5	10	10	30	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	11	11	33	22	11

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	83	28	33	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	919	1047	1579	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	913	1047	1579	-	-	-
Mov Cap-2 Maneuver	913	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	8.7	1.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1579	-	998	-	-
HCM Lane V/C Ratio	0.007	-	0.017	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Site Plans

Issued for	Permitting
Date Issued	May 10, 2024
Latest Issue	May 10, 2024

The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766
Grafton County

Owner/Applicant

Brickyard One Nominee Trust
Richard M. Marchese, Trustee
P.O. Box 720, Middleton, MA 01949

Assessor's Map/Lot: Map 48 Lots 01, 02, & 04 Map 63 Lot 01

Bicycle Parking Summary Chart

Description	Spaces	
	Required	Provided
SHORT TERM SPACES	71	80
LONG TERM SPACES	142	142
TOTAL SPACES	213	222

Bicycle Parking Requirements:

SHORT TERM PARKING 474 UNITS x 0.15 SPACES / 1 UNIT = 71 SPACES

LONG TERM PARKING 474 UNITS x 0.3 SPACES / 1 UNIT = 142 SPACES

TOTAL PARKING REQUIRED = 213 SPACES

Parking Summary Chart

Description	Size		Spaces	
	Required	Provided	Required	Provided
STANDARD SPACES	9 x 18	9 x 18	539	89
GARAGE SPACES*	8 x 18	8 x 18	0	502
EVSE PARKING SPACES**	9 x 18	9 x 18	39	40
EV-READY PARKING SPACES**	9 x 18	9 x 18	117	118
STANDARD ACCESSIBLE SPACES ***	9 x 18	9 x 18	14	20
VAN ACCESSIBLE SPACES***	8 x 18	9 x 18	2	11
LOADING BAYS			0	0
TOTAL SPACES			711	780

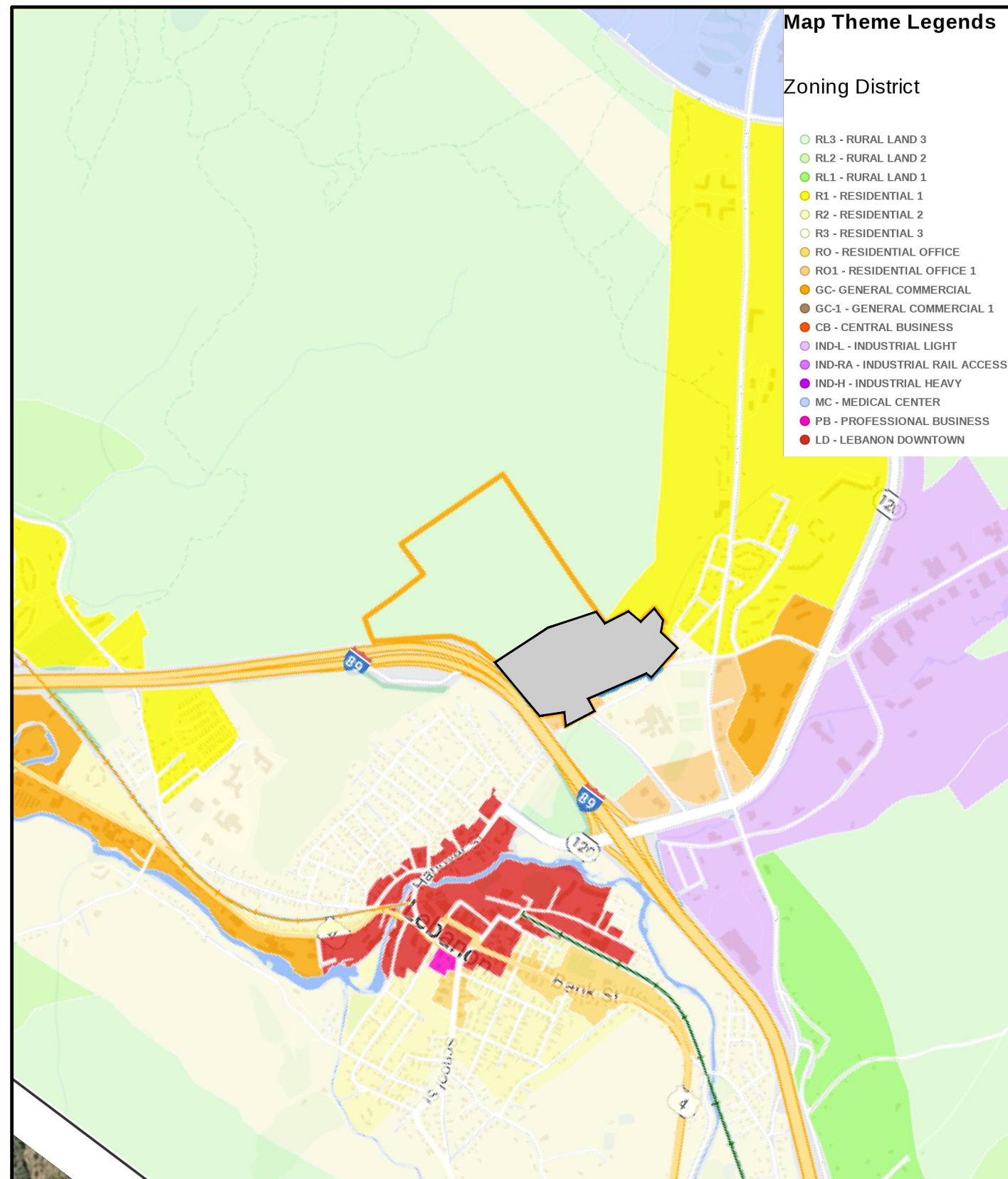
* REQUIRED EVSE PARKING SPACES = 15% OF TOTAL PROVIDED PARKING. REQUIRED EV-READY PARKING SPACES = 5% OF TOTAL PROVIDED PARKING.
** REFER TO PROJECT NARRATIVE REGARDING REDUCED SPACE SIZE FOR GARAGE
*** ADA/STATE/LOCAL REQUIREMENTS
**** INCLUDES 1 ACCESSIBLE STALL BELOW EACH APARTMENT BUILDING

Parking Requirements:

DWELLING, APARTMENT, ONE BEDROOM AND UP 474 UNITS x 1.5 SPACES / 1 = 711 UNITS

TOTAL PARKING REQUIRED = 711 UNITS

MAXIMUM PARKING ALLOWED (120% OF REQUIRED) = 863 SPACES



Sheet Index

No.	Drawing Title	Latest Issue
C1.0	Legend and General Notes	May 10, 2024
C2.0	Overall Layout and Materials Plan	May 10, 2024
C2.1	Layout and Materials Plan 1	May 10, 2024
C2.2	Layout and Materials Plan 2	May 10, 2024
C2.3	Layout and Materials Plan 3	May 10, 2024
C3.0	Overall Grading and Drainage Plan	May 10, 2024
C3.1	Grading and Drainage Plan 1	May 10, 2024
C3.2	Grading and Drainage Plan 2	May 10, 2024
C3.3	Grading and Drainage Plan 3	May 10, 2024
C4.0	Overall Utility Plan	May 10, 2024
C4.1	Utility Plan 1	May 10, 2024
C4.2	Utility Plan 2	May 10, 2024
C4.3	Utility Plan 3	May 10, 2024
C5.0	Overall Erosion Control Plan	May 10, 2024
C5.1	Erosion Control Plan 1	May 10, 2024
C5.2	Erosion Control Plan 2	May 10, 2024
C5.3	Erosion Control Plan 3	May 10, 2024
C6.1	Plan and Profile 1	May 10, 2024
C6.2	Plan and Profile 2	May 10, 2024
C6.3	Plan and Profile 3	May 10, 2024
C7.1 - C7.5	Site Details 1 - 5	May 10, 2024
PP-1	Phasing Plan	May 10, 2024
L1.0	Overall Landscape and Tree Shading Plan	May 10, 2024
L1.1	Landscape Plan 1	May 10, 2024
L1.2	Landscape Plan 2	May 10, 2024
L1.3	Landscape Plan 3	May 10, 2024
L2.1	Landscape Details	May 10, 2024

Reference Drawings

No.	Drawing Title	Latest Issue
SL-1A	Site Lighting Photometric Calculation	May 9, 2024
0089-1201-A	Proposed Plans and Elevations	May 2, 2024
Sv-1 - Sv-3	Existing Conditions Plan of Land	April 1, 2024

PURD Calculations

Zone	Buildable Area (SF)**	/	Permitted Dwelling Units
RESIDENTIAL 1 (R-1)	989,956	3,000	330.0
RESIDENTIAL-OFFICE-1 (R-O-1)	249,920	3,000	83.3
RESIDENTIAL 3 (R-3)	81,820	10,000	8.2
1 PER 10,000*	20,000	10,000	2.0
SUBTOTAL	1,239,676		423
*TOTAL (INCLUDES 12% BONUS)			474

* FIRST 10,000 SQUARE FEET OF ZONE R-1 SUBTRACTED FROM TOTAL SQUARE FOOTAGE. ZONING ALLOWS 474 DWELLING UNITS TOTAL.

** FOR THE PURD CALCULATIONS THE RL-3 ZONE (97.8 ACRES) HAS BEEN EXCLUDED, AREA RESERVED FOR POTENTIAL FUTURE BUILDOUT.

Zoning Summary Chart

Zoning Districts:	Residential 1 (R-1), Residential 3 (R-3), Residential-Office-1 (R-O-1), (RL-3)	
Overlay District:	Flood Zone A, Wetlands Conservation District	
Tax Map & Lot #:	48-01, 48-02, 48-04, & 63-01	
Zoning Regulation Requirements	Required	Provided
MINIMUM LOT AREA	28.5 Acres	126.3 Acres
FRONTAGE	20.0 Feet	932.0 Feet
FRONT YARD SETBACK	20 Feet	21 Feet
SIDE YARD SETBACK	15 Feet	58 Feet
REAR YARD SETBACK	20 Feet	56 Feet
MINIMUM LOT WIDTH	75 Feet	932 Feet
MAXIMUM BUILDING HEIGHT	55 Feet	55 Feet
MAXIMUM BUILDING COVERAGE	25.0 %	13.3 %
BUILDING COVERAGE	N/A	164,950 SF
GROSS FLOOR AREA	N/A	655,000 SF
IMPERVIOUS COVERAGE	N/A	403,365 SF (32.5%)
USE	N/A	Planned Unit Residential Development (PURD)

Open Space Calculations

Zone*	Total Area (SF)	% Required	Open Space Required
RESIDENTIAL 1 (R-1)	1,252,605	30	375,782 SF
RESIDENTIAL-OFFICE-1 (R-O-1)	286,532	30	85,960 SF
RESIDENTIAL 3 (R-3)	123,849	50	61,925 SF
TOTAL OPEN SPACE REQUIRED			523,666 SF

* THE RL-3 ZONE HAS BEEN EXCLUDED FROM THE PURD CALCULATIONS, AREA RESERVED FOR POTENTIAL FUTURE BUILDOUT

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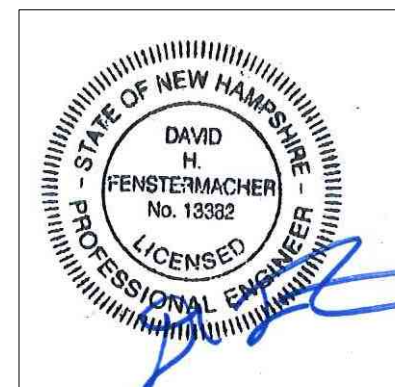
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Wetland Scientist (Goddard)

Scott G. Goddard
291 Main Street
Suite 8
Northborough, MA 01532



Legend

Exist.	Prop.		Exist.	Prop.	
		PROPERTY LINE			CONCRETE
		PROJECT LIMIT LINE			HEAVY DUTY PAVEMENT
		RIGHT-OF-WAY/PROPERTY LINE			BUILDINGS
		EASEMENT			RIPRAP
		BUILDING SETBACK			CONSTRUCTION EXIT
		PARKING SETBACK			
		BASELINE	27.35 TC x	27.35 TC x	TOP OF CURB ELEVATION
		CONSTRUCTION LAYOUT	26.85 BC x	26.85 BC x	BOTTOM OF CURB ELEVATION
		ZONING LINE	132.75 x	132.75 x	SPOT ELEVATION
		TOWN LINE	45.0 TW x	45.0 TW x	TOP & BOTTOM OF WALL ELEVATION
			38.5 BW	38.5 BW	BORING LOCATION
		LIMIT OF DISTURBANCE			TEST PIT LOCATION
		WETLAND LINE WITH FLAG			MONITORING WELL
		FLOODPLAIN			
		BORDERING LAND SUBJECT TO FLOODING			UNDERDRAIN
		WETLAND BUFFER ZONE			DRAIN
		NO DISTURB ZONE			ROOF DRAIN
		200' RIVERFRONT AREA			SEWER
					FORCE MAIN
		GRAVEL ROAD			OVERHEAD WIRE
		EDGE OF PAVEMENT			WATER
		BITUMINOUS BERM			FIRE PROTECTION
		BITUMINOUS CURB			DOMESTIC WATER
		CONCRETE CURB			GAS
		CURB AND GUTTER			ELECTRIC
		EXTRUDED CONCRETE CURB			STEAM
		MONOLITHIC CONCRETE CURB			TELEPHONE
		PRECAST CONC. CURB			FIRE ALARM
		SLOPED GRAN. EDGING			CABLE TV
		VERT. GRAN. CURB			
		LIMIT OF CURB TYPE			CATCH BASIN CONCENTRIC
		SAWCUT			CATCH BASIN ECCENTRIC
		BUILDING			DOUBLE CATCH BASIN CONCENTRIC
		BUILDING ENTRANCE			DOUBLE CATCH BASIN ECCENTRIC
		LOADING DOCK			GUTTER INLET
		BOLLARD			DRAIN MANHOLE CONCENTRIC
		DUMPSTER PAD			DRAIN MANHOLE ECCENTRIC
		SIGN			TRENCH DRAIN
		DOUBLE SIGN			PLUG OR CAP
					CLEANOUT
					FLARED END SECTION
					HEADWALL
		STEEL GUARDRAIL			SEWER MANHOLE CONCENTRIC
		WOOD GUARDRAIL			SEWER MANHOLE ECCENTRIC
		PATH			CURB STOP & BOX
		APPROXIMATE LIMIT OF CLEARING			WATER VALVE & BOX
		WIRE FENCE			TAPPING SLEEVE, VALVE & BOX
		FENCE			FIRE DEPARTMENT CONNECTION
		STOCKADE FENCE			FIRE HYDRANT
		STONE WALL			WATER METER
		RETAINING WALL			POST INDICATOR VALVE
		STREAM / POND / WATER COURSE			WATER WELL
		DETENTION BASIN			
		HAY BALES			GAS GATE
		SILT FENCE			GAS METER
		SILT SOCK / STRAW WATTLE			ELECTRIC MANHOLE
		MINOR CONTOUR			ELECTRIC METER
		MAJOR CONTOUR			LIGHT POLE
		PARKING COUNT			TELEPHONE MANHOLE
		COMPACT PARKING STALLS			TRANSFORMER PAD
		DOUBLE YELLOW LINE			UTILITY POLE
		STOP LINE			GUY POLE
		CROSSWALK			GUY WIRE & ANCHOR
		ACCESSIBLE CURB RAMP			HAND HOLE
		ACCESSIBLE PARKING			PULL BOX
		VAN-ACCESSIBLE PARKING			
					MATCHLINE

Abbreviations

General	
ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EX	EXISTING
FDN	FOUNDATION
FFE	FIRST FLOOR ELEVATION
GRAN	GRANITE
GFE	GARAGE FLOOR ELEVATION
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TS	TOP OF SLOPE
TYP	TYPICAL
Utility	
AD	AREA DRAIN
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
DW	DRYWELL
FA	FIRE ALARM
FES	FLARED END SECTION
FM	FORCE MAIN
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GI	GUTTER INLET
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
I=	INVERT ELEVATION
LP	LIGHT POLE
MES	METAL END SECTION
PIV	POST INDICATOR VALVE
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
RIM=	RIM ELEVATION
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE AND BOX
UG	UNDERGROUND
UGE/T	UNDERGROUND ELECTRIC/TELECOM
UP	UTILITY POLE

Notes

General

1. THE PURPOSE OF THESE SITE PLANS ARE TO SHOW A PROPOSED SITE DESIGN FOR THE PERMITTING OF A MULTI-FAMILY RESIDENTIAL PROJECT.
2. CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
4. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
5. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE 6-INCHES LOAM AND SEED.
6. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, THE SITE CONTRACTOR SHALL PERFORM EARTHWORK OPERATIONS REQUIRED UP TO SUBGRADE ELEVATIONS.
7. WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS, WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
8. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS, DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
9. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
10. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
11. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE AGENCY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
12. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
13. DAMAGE RESULTING FROM CONSTRUCTION LOADS AND ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
14. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
15. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE NPDES CONSTRUCTION GENERAL PERMIT (CGP) PROGRAM AND EPA JURISDICTION. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR IS TO FILE A CGP NOTICE OF INTENT WITH THE EPA AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE NPDES REGULATIONS. CONTRACTOR SHALL CONFIRM THE OWNER HAS ALSO FILED A NOTICE OF INTENT WITH THE EPA.
16. SNOW STORAGE LOCATIONS SHOWN ON LAYOUT AND MATERIALS PLAN. PREPARE SNOW REMOVAL AT THE FACILITY WILL FOLLOW THE CURRENT SNOW MANAGEMENT PLAN TO REMOVE SNOW TO REMOTE LOCATIONS AS NECESSARY.
17. TREE CLEARING SHALL NOT BE CONDUCTED DURING JUNE 1 TO JULY 31 IN ORDER TO MINIMIZE ADVERSE IMPACTS TO THE NORTHERN LONG EARED BAT.

Utilities

- THE UTILITY COMPANIES SERVING THE PROJECT AREA ARE:
- | | |
|---------------|-----------------------------|
| A. WATER: | CITY OF LEBANON |
| B. SEWER: | CITY OF LEBANON |
| C. ELECTRIC: | LIBERTY UTILITIES |
| D. TELEPHONE: | CONSOLIDATED COMMUNICATIONS |
| E. CABLE TV: | COMCAST |
| F. GAS: | NONE |
2. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER (OR ITS REPRESENTATIVE(S)) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS EXISTING ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATION, SIZE, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
3. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
4. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
5. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
- A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
 - B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
 - C. LANDSCAPE, LOAM AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
6. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE EXISTING UTILITY (ELECTRIC, GAS, WATER, FIBER, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS SHALL BE COORDINATED WITH OWNER AND ARCHITECT.
7. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELATIONS AND FOR THE ALLOCATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
8. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
- A. WATER PIPES SHALL BE CEMENT LINER DUCTILE IRON CLASS 52.
 - B. SANITARY SEWER PIPES SHALL BE POLYVINYL CHLORIDE (PVC) SEWER PIPE SDR 35.
 - C. STORM DRAINAGE PIPES SHALL BE SMOOTH INTERIOR DUAL WALL HIGH DENSITY POLYETHYLENE (HDPE).

Layout and Materials

1. DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
2. CURB RADI ARE 3 FEET UNLESS OTHERWISE NOTED.
3. CURBING SHALL BE PRECAST CONCRETE (PCC) WITHIN THE SITE UNLESS OTHERWISE INDICATED ON THE PLANS.
4. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND DETAILS CONTIGUOUS TO THE BUILDING, INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
5. PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A LICENSED LAND SURVEYOR (LLS).
6. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.

Demolition

1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC., UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, INCLUDING WATER AND SEWER LINES, GAS LINES, ETC., TO A MINIMUM DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
2. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
3. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
4. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL. TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
5. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS, DAMAGES, EXPENSES, LOSSES, OR LITIGATION OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR ACTIONS INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.

Existing Conditions Information

1. BASE PLAN: PROVIDED BY VHB, INC., DATED NOVEMBER, 2022. FIELD SURVEY OF PROJECT LOCUS PROVIDED BY VHB, IN SEPTEMBER THRU NOVEMBER, 2022.
2. TOPOGRAPHY: ELEVATIONS ARE BASED ON NAVD 1988.

Local Permits

1. NOTICE OF ACTION ISSUED BY THE PLANNING BOARD: PENDING

State Permits

1. NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES) ALTERATION OF TERRAIN PERMIT AOT-TO BE SUBMITTED.
2. NHDES SEWER CONNECTION PERMIT TO BE SUBMITTED.
3. NHDES WETLANDS AND NON-SITE SPECIFIC PERMIT TO BE SUBMITTED.

Federal Permits

1. US EPA NPDES CONSTRUCTION GENERAL PERMIT (CGP) TO BE SUBMITTED

Document Use

1. THESE PLANS AND CORRESPONDING CAD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION OF ANY INFORMATION OR INFORMATION CONTAINED IN THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK, WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.
2. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM AUTOMATIC CONVERSION OF THE ORIGINAL PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
3. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWING. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

New Hampshire Fish and Game

1. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHfgreview@wildlife.nh.gov. EMAIL SUBJECT LINE: _____
2. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHF&G IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION AS FEASIBLE.
3. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHF&G AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHF&G, IF ANY. TO ENSURE THE PROJECT DOES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04.
4. THE NHF&G, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.
5. ENV-WQ 1506.15 REQUIRES THAT:
 - 5.1. ALL MANUFACTURED EROSION AND SEDIMENT CONTROLS PRODUCTS, EXCEPT FOR SILT FENCE INSTALLED IN ACCORDANCE WITH ENV-WQ 1506.04, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8" INCH. TIE REINFORCEMENT MATS SHALL BE COVERED WITH SOIL TO PREVENT EXPOSURE OF THE MATS TO THE SURFACE.



2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900

The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

[illegible]

Designed by	TMD	Checked by	MJV
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Permitting May 10, 2024

Not Approved for Construction

Legend and General Notes

Drawing Title

Drawing Number

C1.0

Sheet 1 of 26

Project Number
52933.00



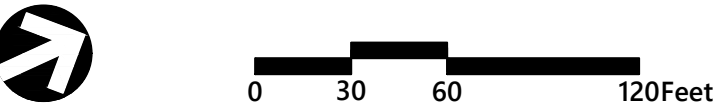
2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900

ABUTTING PROPERTIES ACROSS INTERSTATE 89 INCLUDE THE FOLLOWING:

1. CITY OF LEBANON
MAP 76, LOT 8
BOOK 0, PAGE 0
51 NORTH PARK STREET
LEBANON, NH 03766
2. RADER III, GERALD LENARD
MAP 77, LOT 81
BOOK 0, PAGE 0
54 WINTER STREET
LEBANON, NH 03766
3. SEIDMAN, MAX JAMES
MAP 77, LOT 83
BOOK 0, PAGE 0
53 WINTER STREET
LEBANON, NH 03766
4. CITY OF LEBANON
MAP 77, LOT 107
BOOK 0, PAGE 0
51 NORTH PARK STREET
LEBANON, NH 03766
5. VALDIVIEZO ZENIA MAE
MAP 77, LOT 111
BOOK 0, PAGE 0
48 JUNIPER CIRCLE
LEBANON, NH 03766
6. LEE, CUONG V
MAP 77, LOT 113
BOOK 0, PAGE 0
194 PLAIN STREET
ROCKLAND, MA 02370
7. LEUCA MAGDALENA TTEE
MAP 77, LOT 115
BOOK 0, PAGE 0
9920 SE 40TH STREET
MERCER ISLAND, WA 98040

Notes

EXISTING BUS STOP AT CORNER OF HEATER RD AND OLD ETNA ROAD IS APPROXIMATELY 0.20 MILES AWAY FROM PROJECT SITE.



The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

No.	Revision	Date	Appr.

Designed by	TMD	Checked by	MJV
Issued for		Date	May 10, 2024

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Overall Layout and
Materials Plan

STATE OF NEW HAMPSHIRE

DAVID H. FENSTERMACHER

No. 13882

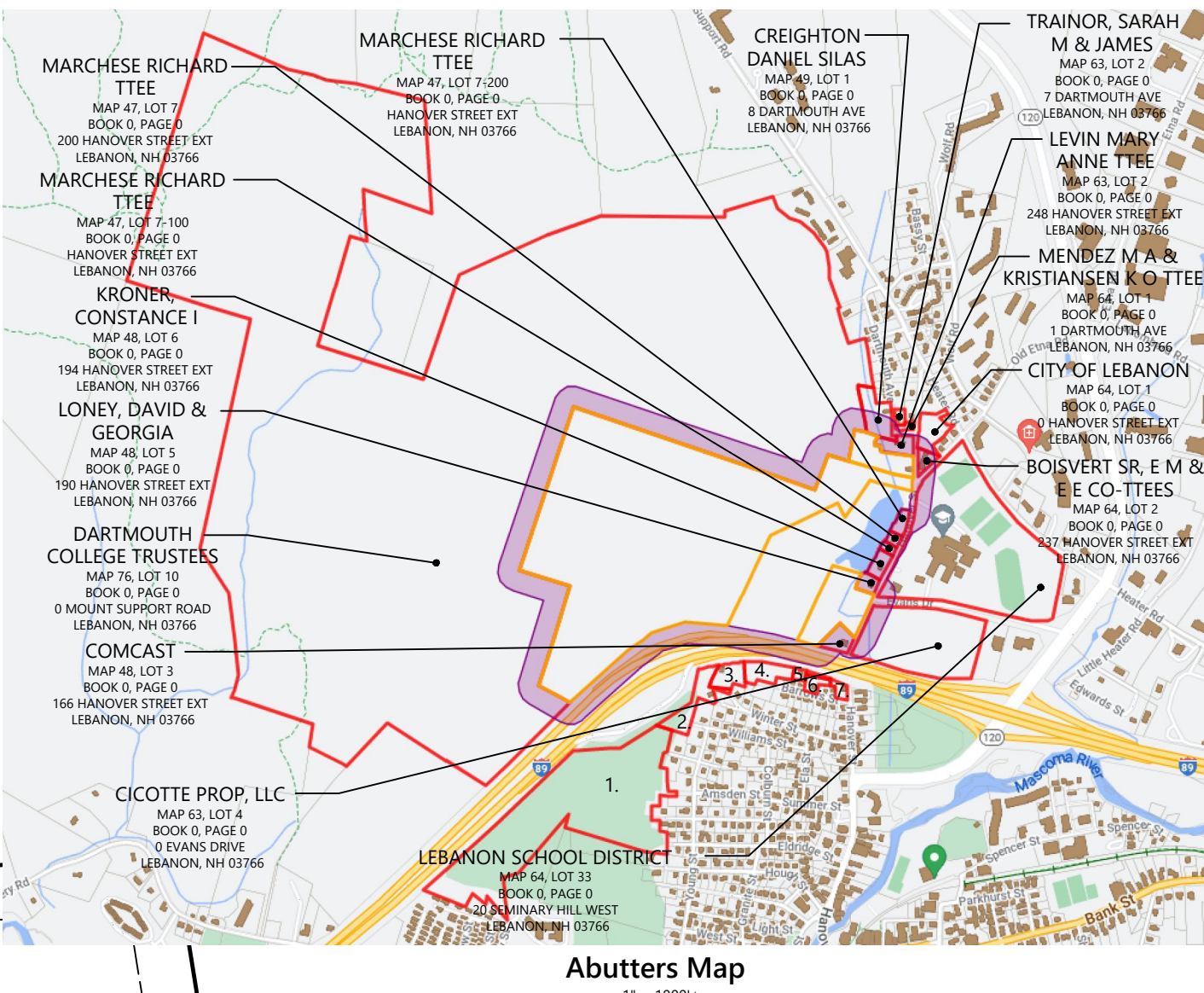
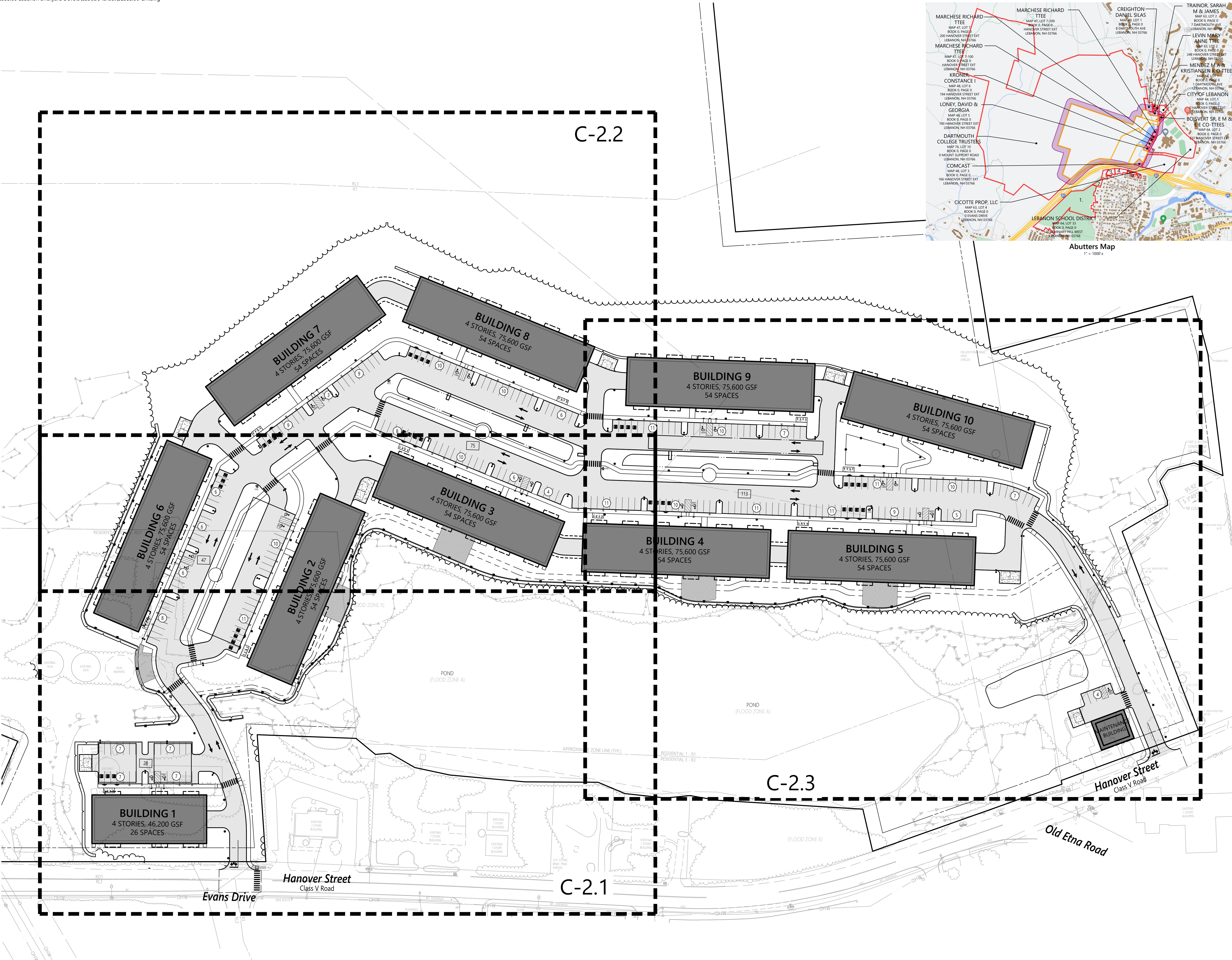
PROFESSIONAL ENGINEER

C2.0

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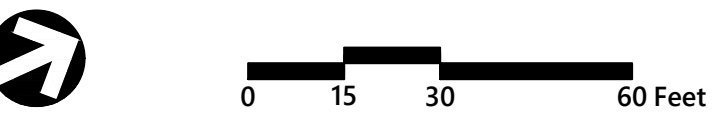
2 Bedford Farms Drive
Suite 200
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Sign Summary

M.U.T.C.D. Number	Specification Width	Height	Desc.
R1-1	30"	30"	STOP
R7-8	12"	18"	RESERVED PARKING
R7-8P	12"	6"	VAN RESTRICTION
D9-11B	12"	18"	ELECTRIC VEHICLE CHARGING
D9-11BP	12"	12"	ELECTRIC VEHICLE CHARGING

SNOW STORAGE AREA



The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

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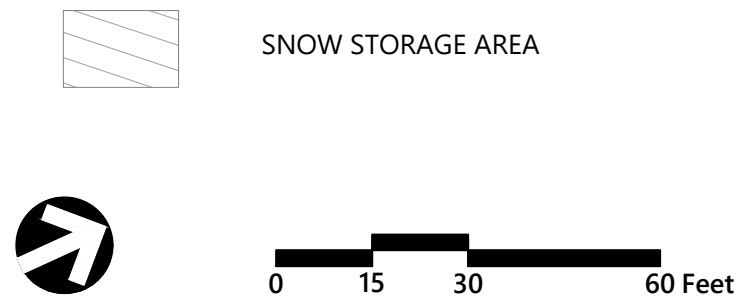
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Layout and Materials
Plan 1



C2.1

Sheet 3 of 26

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174 Hanover Street Extension
Lebanon, New Hampshire 03766

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Drawing Number **C2.2**

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4 26

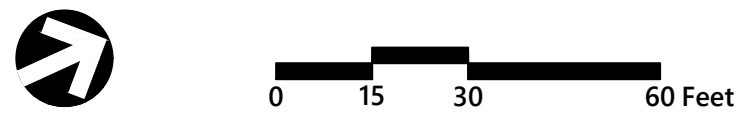
Project Number **52933.00**



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SNOW STORAGE AREA



The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

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TMD	MJV
Issued for	Date
Permitting	May 10, 2024

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Drawing Title
**Layout and Materials
Plan 3**

Drawing Number

C2.3

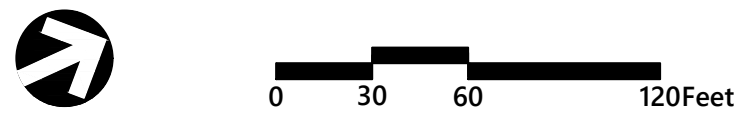
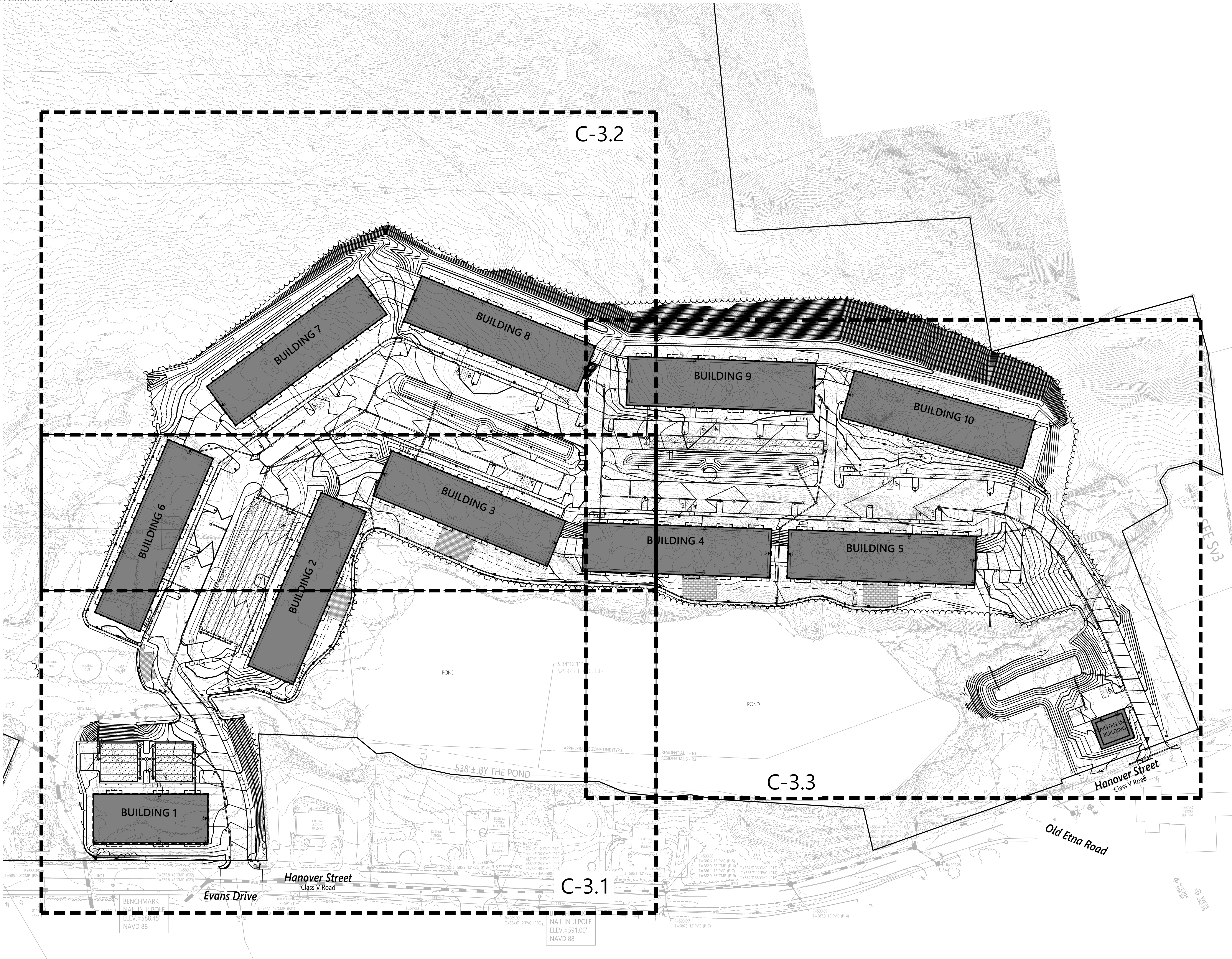
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The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

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Permitting

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Overall Grading
and Drainage Plan

C3.0

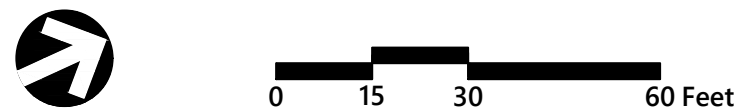
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Project Number
52933.00

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The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

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Issued for **Permitting** Date **May 10, 2024**

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Drawing Title
**Grading and Drainage
Plan 1**

Drawing Number

C3.1

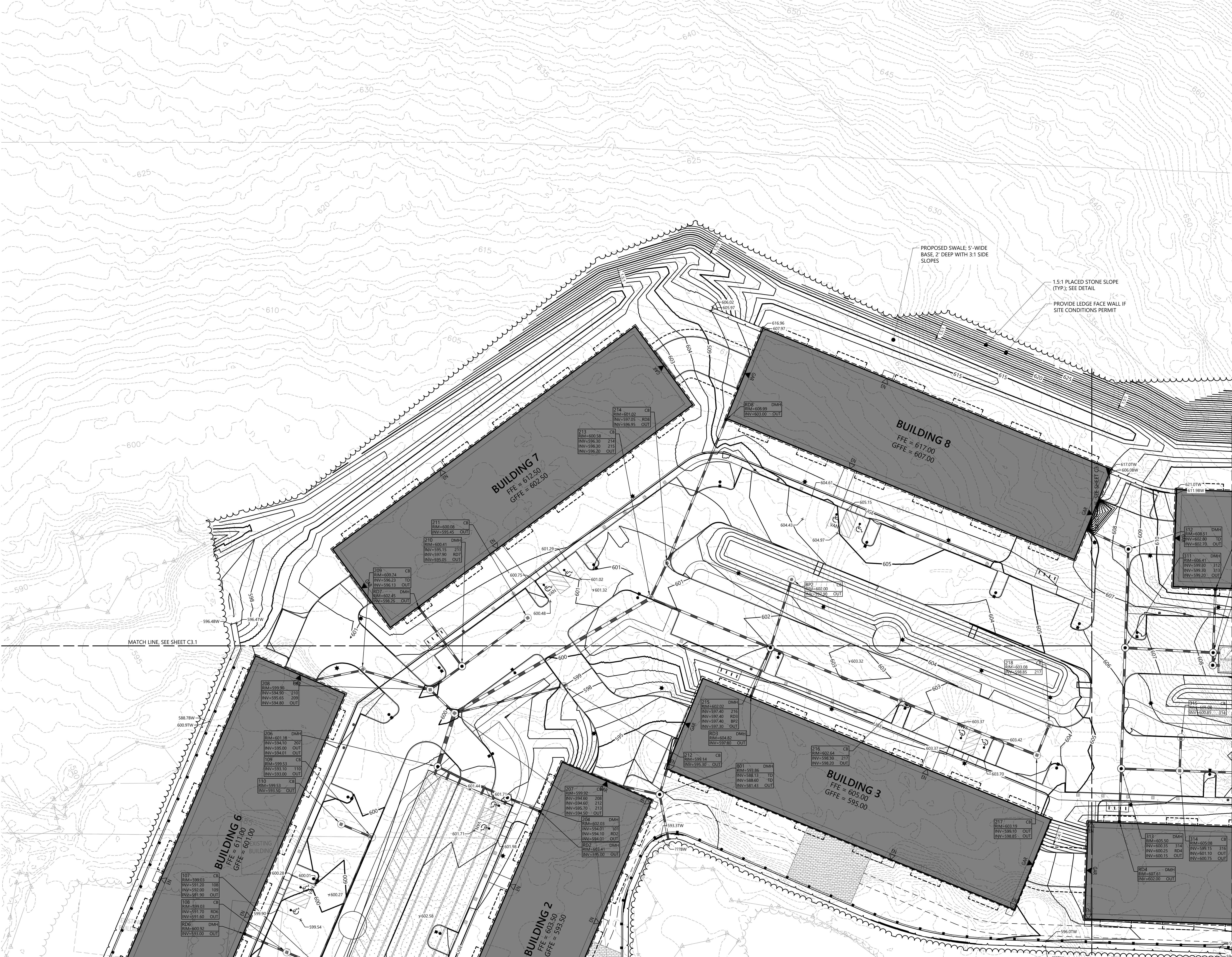
Sheet 7 of 26

Project Number
52933.00

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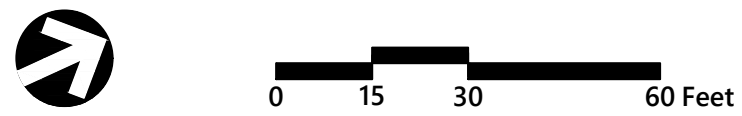


2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900





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Suite 200
Bedford, NH 03110
603.391.3900



The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

No.	Revision	Date	Appr.

Designed by TMD Checked by MJV

Issued for Permitting Date May 10, 2024

Not Approved for Construction
Drawing Title
**Grading and Drainage
Plan 3**

Professional Engineer Seal for David H. Fenstermacher, No. 13882, State of New Hampshire.

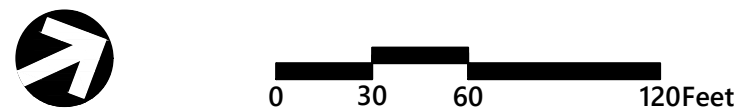
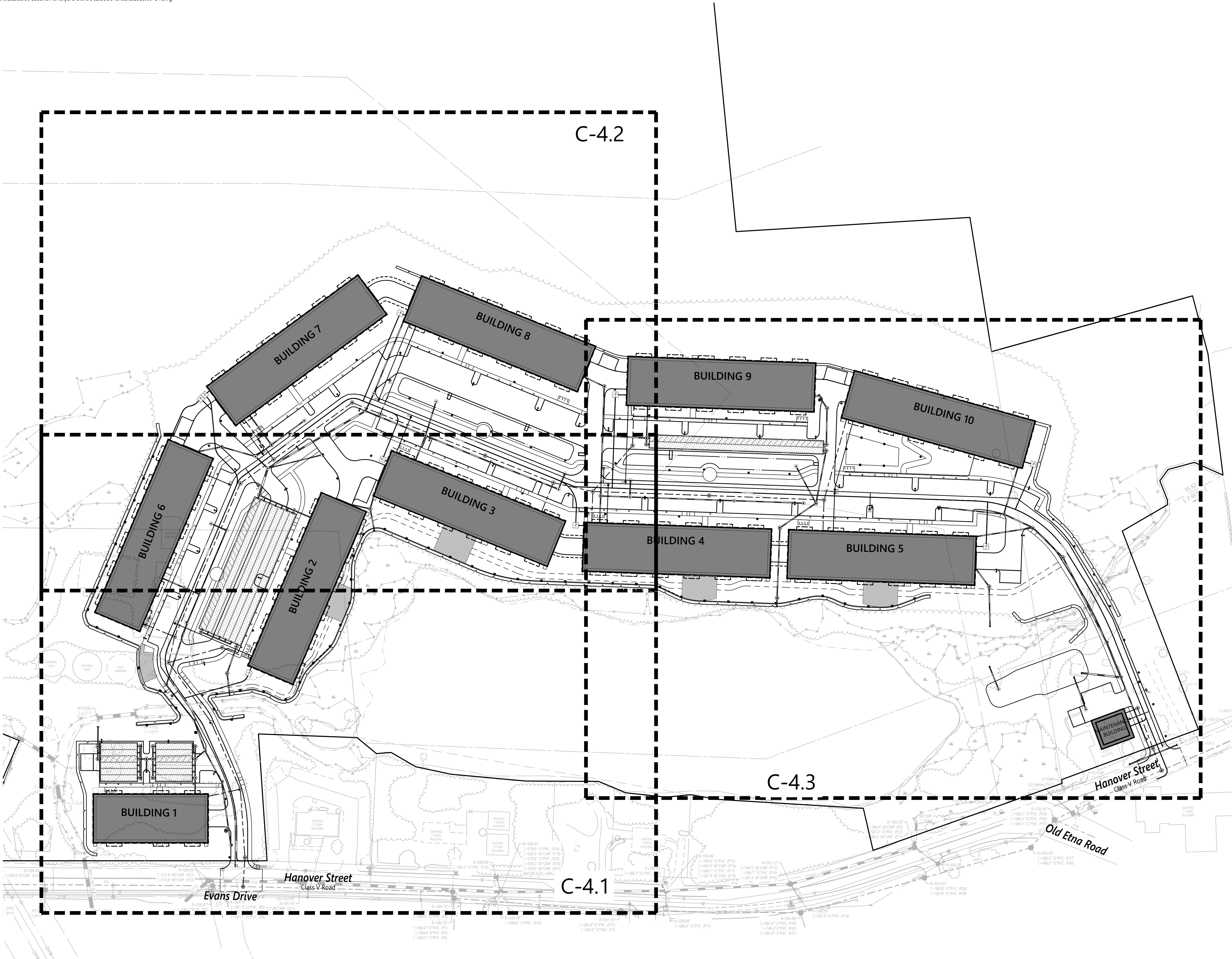
C3.3

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Project Number 52933.00



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The Brickyard Residential Development

174 Hanover Street Extension
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TMD	MJV
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Permitting	May 10, 2024

Not Approved for Construction
Drawing Title
Overall Utility Plan

C4.0

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Project Number
52933.00

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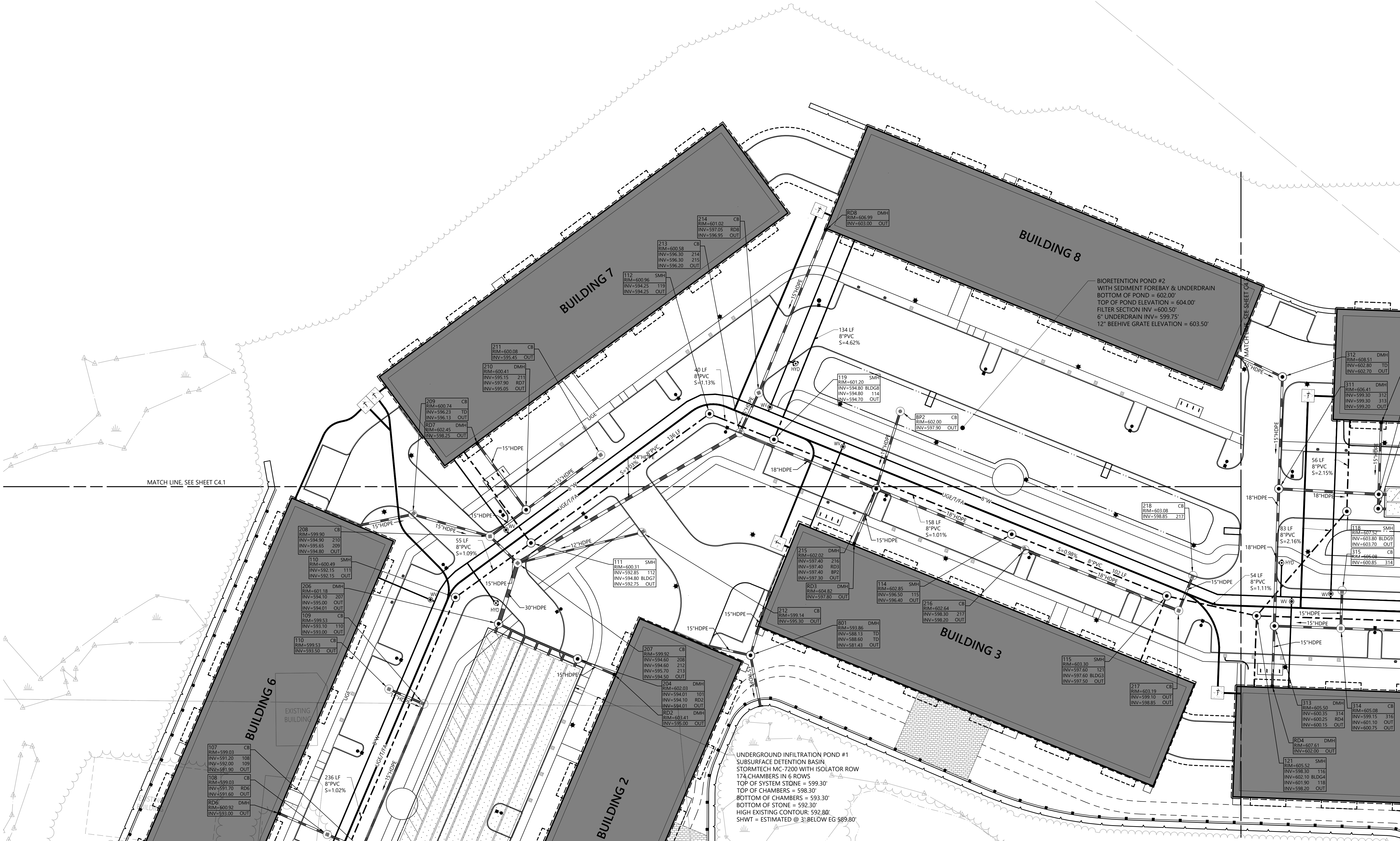
174 Hanover Street Extension
Lebanon, New Hampshire 03766

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TMD	MJV

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Utility Plan 1





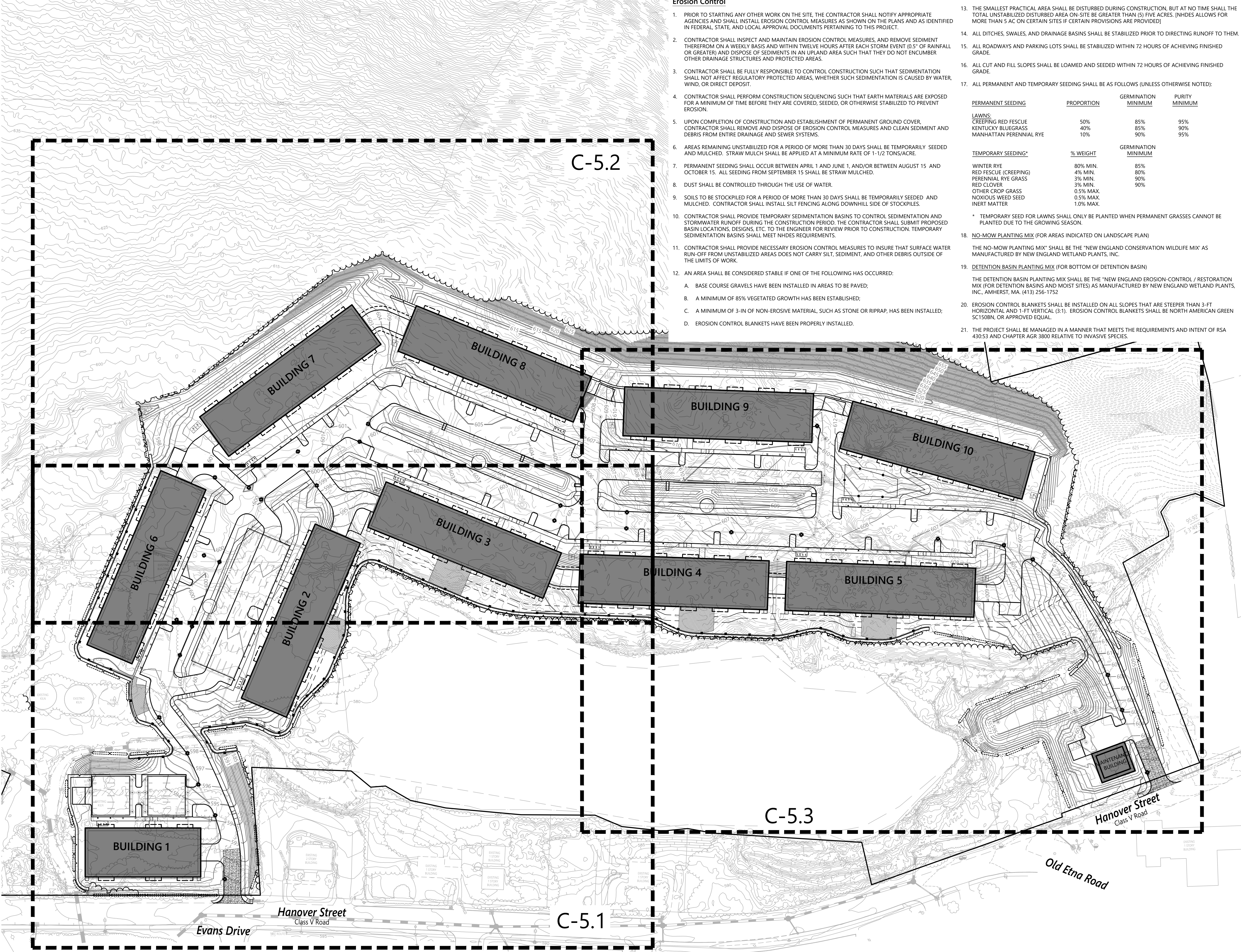


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Erosion Control

1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT (0.5" OF RAINFALL OR GREATER) AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.
6. AREAS REMAINING UNSTABILIZED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE TEMPORARILY SEEDED AND MULCHED. STRAW MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 1-1/2 TONS/ACRE.
7. PERMANENT SEEDING SHALL OCCUR BETWEEN APRIL 1 AND JUNE 1, AND/OR BETWEEN AUGUST 15 AND OCTOBER 15. ALL SEEDING FROM SEPTEMBER 15 SHALL BE STRAW MULCHED.
8. DUST SHALL BE CONTROLLED THROUGH THE USE OF WATER.
9. SOILS TO BE STOCKPILED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE TEMPORARILY SEEDED AND MULCHED. CONTRACTOR SHALL INSTALL SILT FENCING ALONG DOWNHILL SIDE OF STOCKPILES.
10. CONTRACTOR SHALL PROVIDE TEMPORARY SEDIMENTATION BASINS TO CONTROL SEDIMENTATION AND STORMWATER RUNOFF DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL SUBMIT PROPOSED BASIN LOCATIONS, DESIGNS, ETC. TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. TEMPORARY SEDIMENTATION BASINS SHALL MEET NHDES REQUIREMENTS.
11. CONTRACTOR SHALL PROVIDE NECESSARY EROSION CONTROL MEASURES TO INSURE THAT SURFACE WATER RUN-OFF FROM UNSTABILIZED AREAS DOES NOT CARRY SILT, SEDIMENT, AND OTHER DEBRIS OUTSIDE OF THE LIMITS OF WORK.
12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
 - B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - C. A MINIMUM OF 3-IN OF NON-EROSIVE MATERIAL, SUCH AS STONE OR RIPRAP, HAS BEEN INSTALLED;
 - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

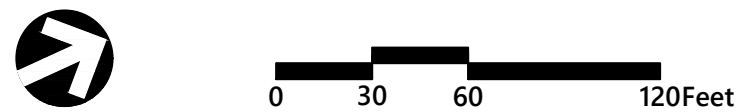
13. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT AT NO TIME SHALL THE TOTAL UNSTABILIZED DISTURBED AREA ON-SITE BE GREATER THAN (5) FIVE ACRES. [NHDES ALLOWS FOR MORE THAN 5 AC ON CERTAIN SITES IF CERTAIN PROVISIONS ARE PROVIDED]
14. ALL DITCHES, SWALES, AND DRAINAGE BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
15. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
16. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
17. ALL PERMANENT AND TEMPORARY SEEDING SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED):

PERMANENT SEEDING	PROPORTION	GERMINATION MINIMUM	PURITY MINIMUM
LAWNS:			
CREeping RED FESCUE	50%	85%	95%
KENTUCKY BLUEGRASS	40%	85%	90%
MANHATTAN PERENNIAL RYE	10%	90%	95%
TEMPORARY SEEDING*	% WEIGHT	GERMINATION MINIMUM	
WINTER RYE	80% MIN.	85%	
RED FESCUE (CREeping)	4% MIN.	80%	
PERENNIAL RYE GRASS	3% MIN.	90%	
RED CLOVER	3% MIN.	90%	
OTHER CROP GRASS	0.5% MAX.		
NOXIOUS WEEED SEED	0.5% MAX.		
INERT MATTER	1.0% MAX.		

* TEMPORARY SEED FOR LAWNS SHALL ONLY BE PLANTED WHEN PERMANENT GRASSES CANNOT BE PLANTED DUE TO THE GROWING SEASON.
18. NO-MOW PLANTING MIX (FOR AREAS INDICATED ON LANDSCAPE PLAN)

THE NO-MOW PLANTING MIX* SHALL BE THE "NEW ENGLAND CONSERVATION WILDLIFE MIX" AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC.
19. DETENTION BASIN PLANTING MIX (FOR BOTTOM OF DETENTION BASIN)

THE DETENTION BASIN PLANTING MIX SHALL BE THE "NEW ENGLAND EROSION-CONTROL / RESTORATION MIX (FOR DETENTION BASINS AND MOIST SITES) AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC., AMHERST, MA. (413) 256-1752
20. EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES THAT ARE STEEPER THAN 3-FT HORIZONTAL AND 1-FT VERTICAL (3:1). EROSION CONTROL BLANKETS SHALL BE NORTH AMERICAN GREEN SC150BN, OR APPROVED EQUAL.
21. THE PROJECT SHALL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.



The Brickyard
Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

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Issued for	Permitting	Date	May 10, 2024

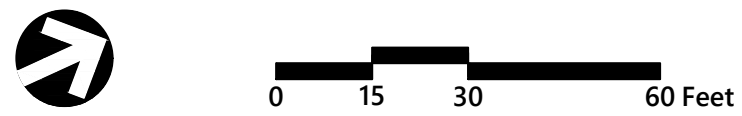
Not Approved for Construction
Drawing Title
Overall Erosion
Control Plan

Drawing Number
C-5.0
Sheet 14 of 26
Project Number
52933.00
Page 531 of 555

DAVID H. FENSTERMACHER
No. 13882
PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
LICENSED



2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900



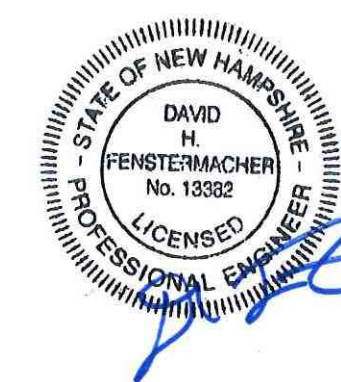
**The Brickyard
Residential Development**

174 Hanover Street Extension
Lebanon, New Hampshire 03766

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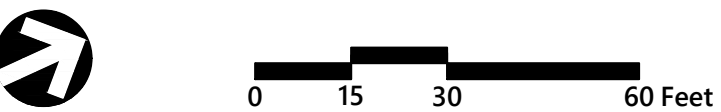
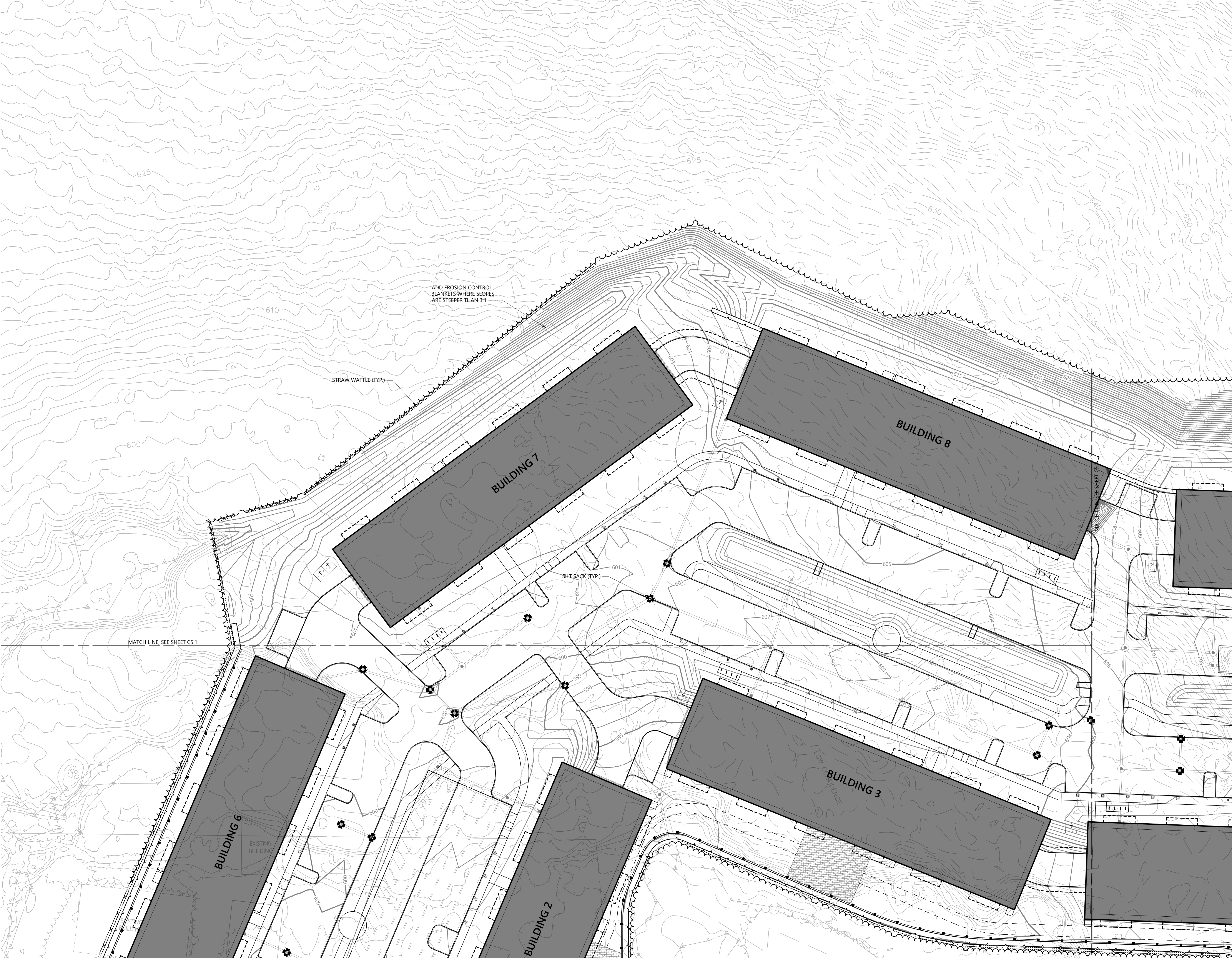
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Drawing Title
Erosion Control Plan 1



C-5.1

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Project Number
52933.00



The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

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Issued for		Date	May 10, 2024

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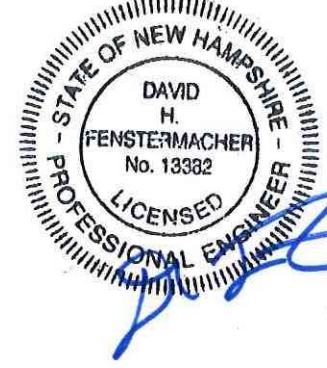
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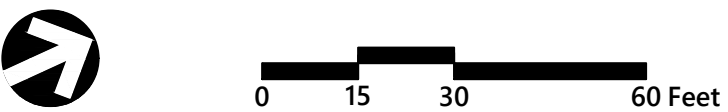
Drawing Number

C-5.2

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Project Number
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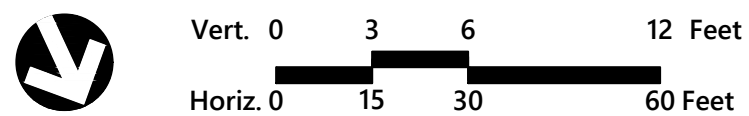
Erosion Control Plan 3

C-5.3

Sheet 17 of 26

Project Number
52933.00





174 Hanover Street Extension
Lebanon, New Hampshire 03766

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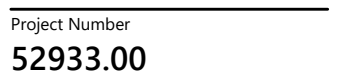
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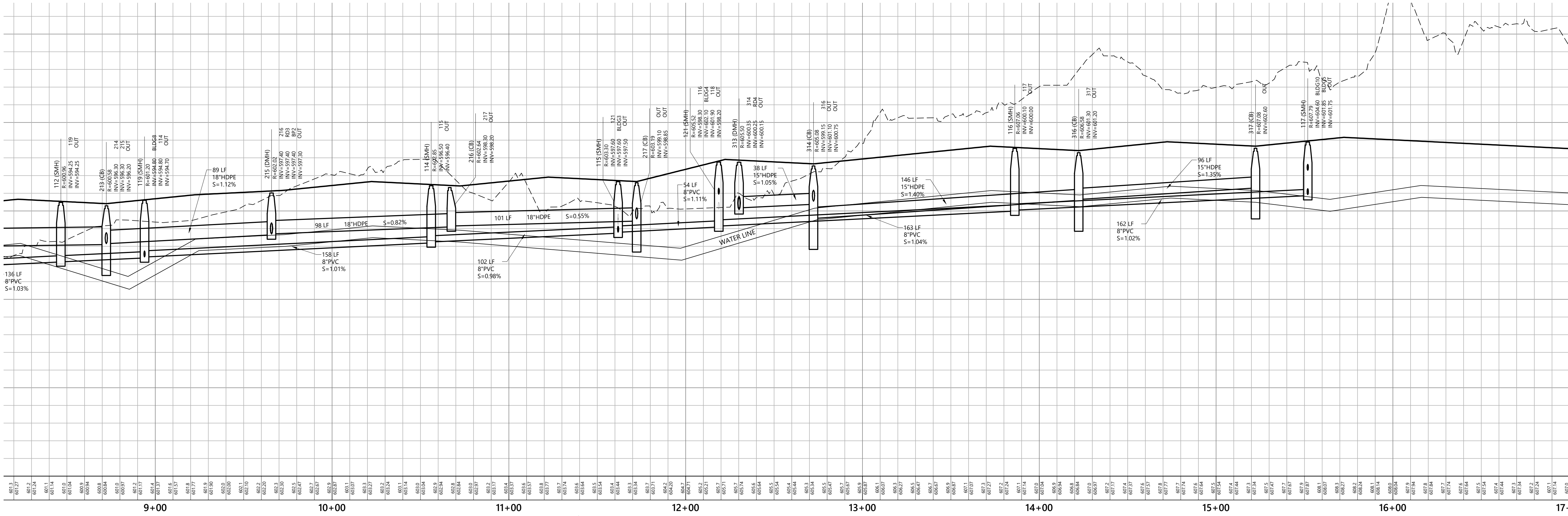
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Sheet _____ of _____

18 26

Project Number _____





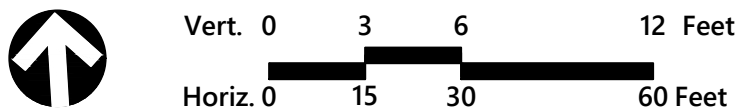
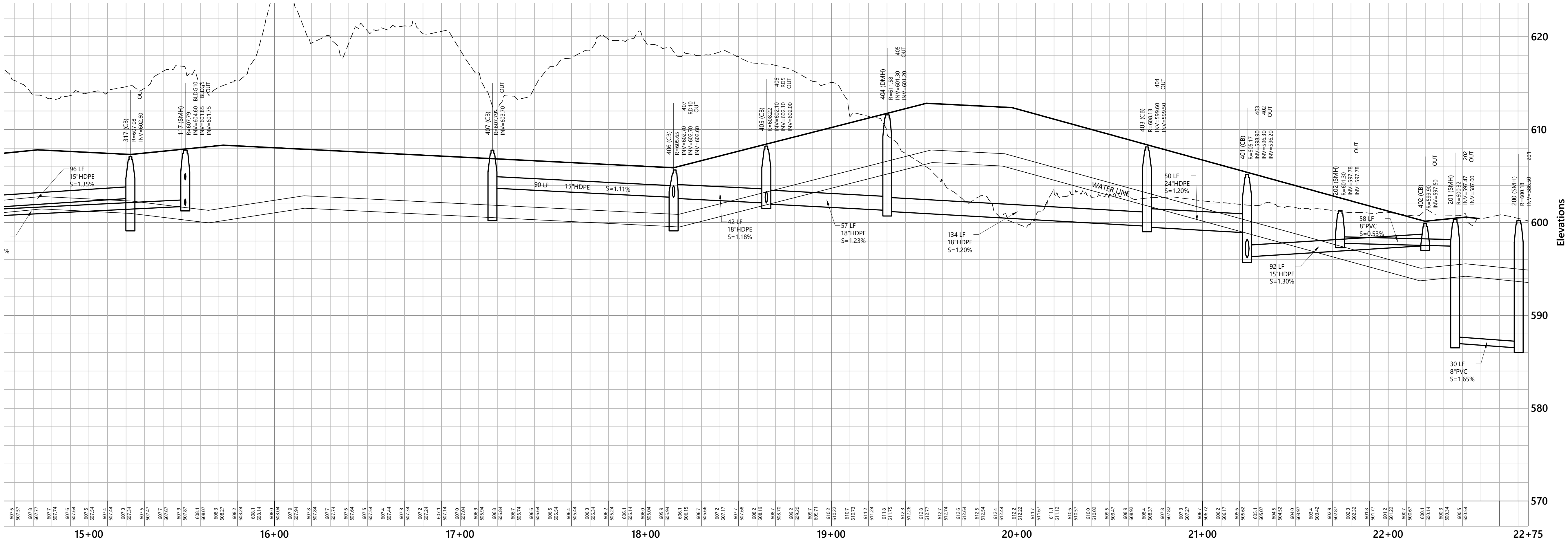
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Drawing Title

Plan and Profile 2

Sewer, Drainage and Water



The Brickyard Residential Development

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Drawing Title

Plan and Profile 3
Sewer, Drainage and Water

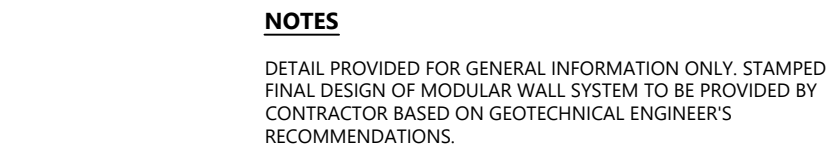
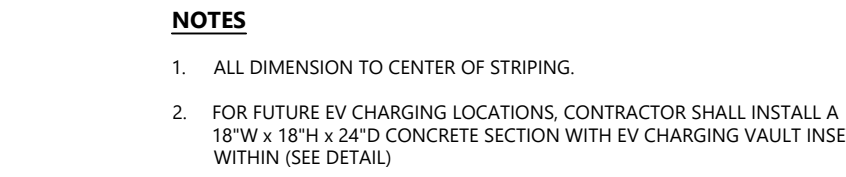
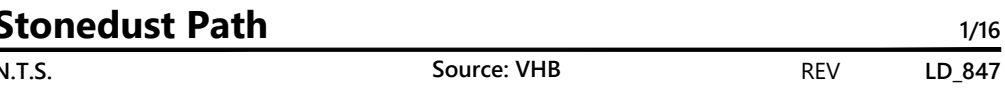
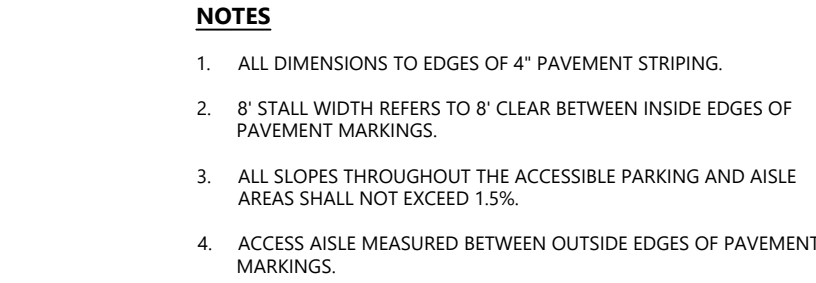
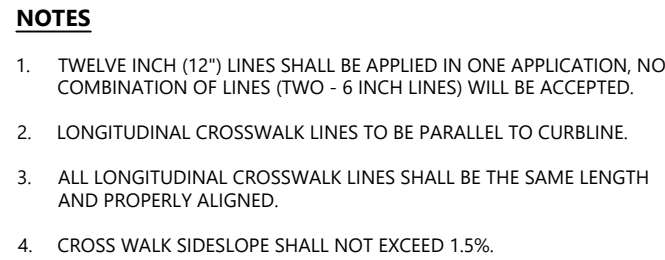
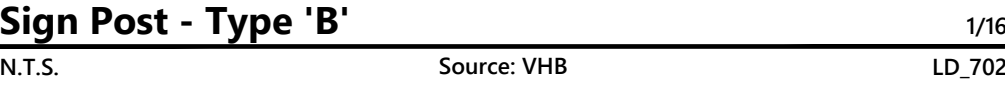
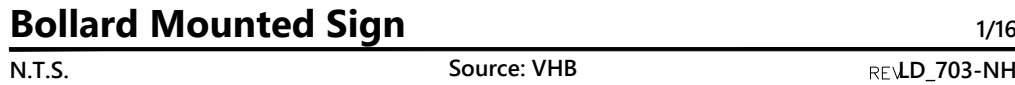
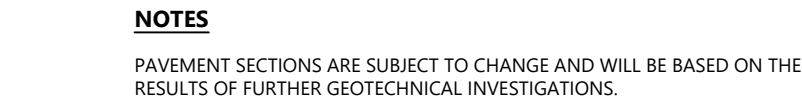
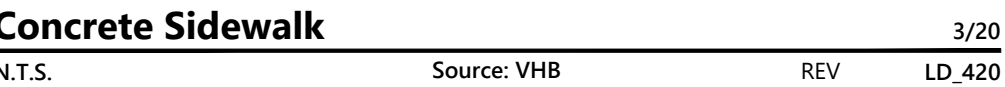
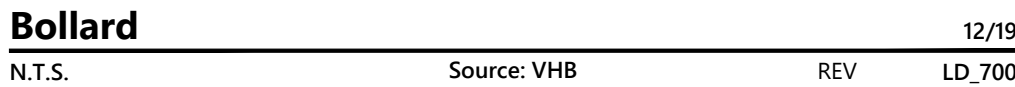
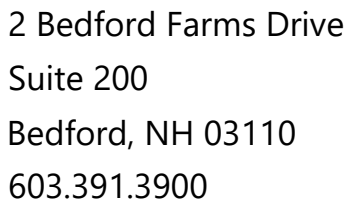


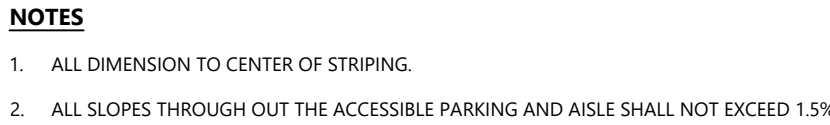
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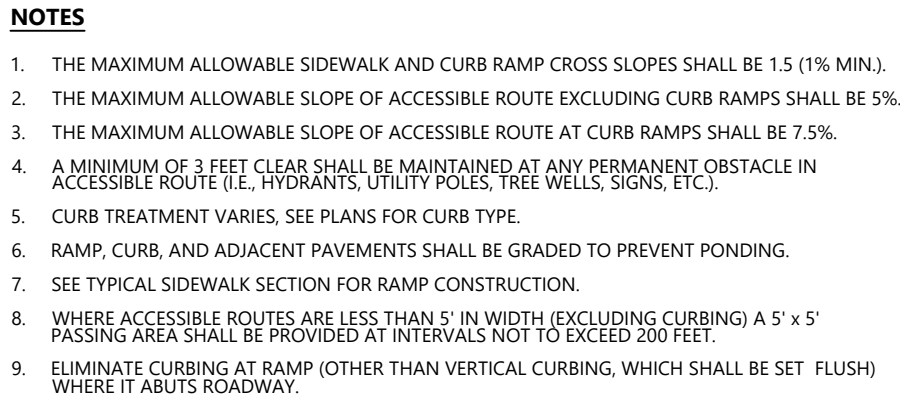
Project Number
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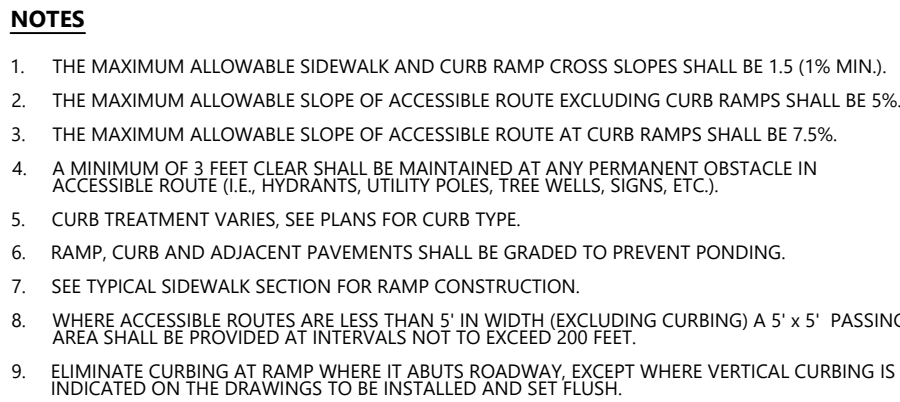


ELECTRIC VEHICLE CHARGING SPACES			11/22
N.T.S.	Source: VHB	REV	LD.



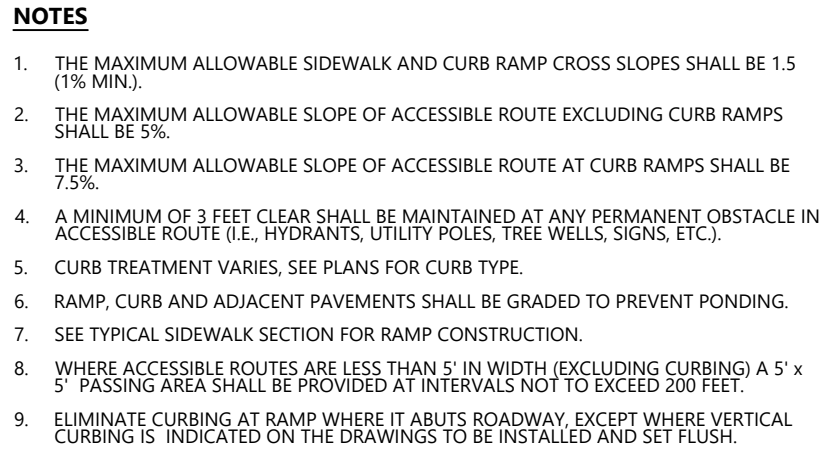
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N.T.S. Source: VHB REV LD_500

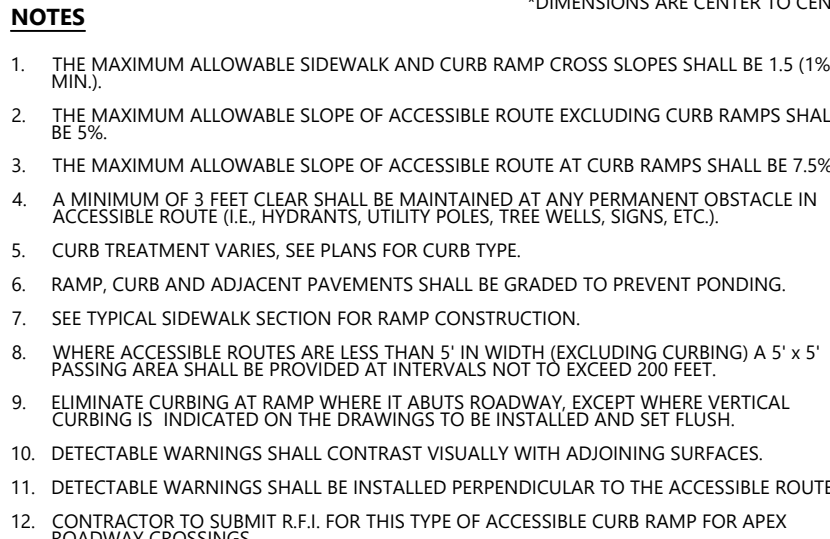


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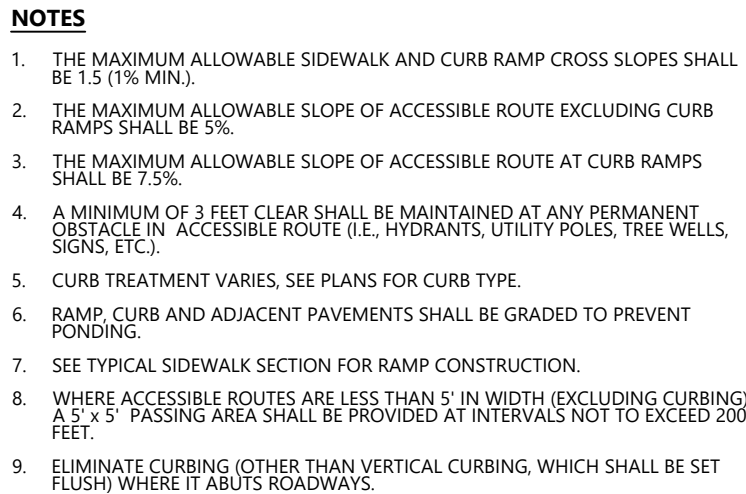


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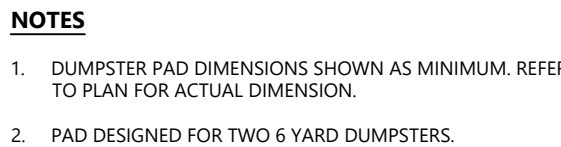
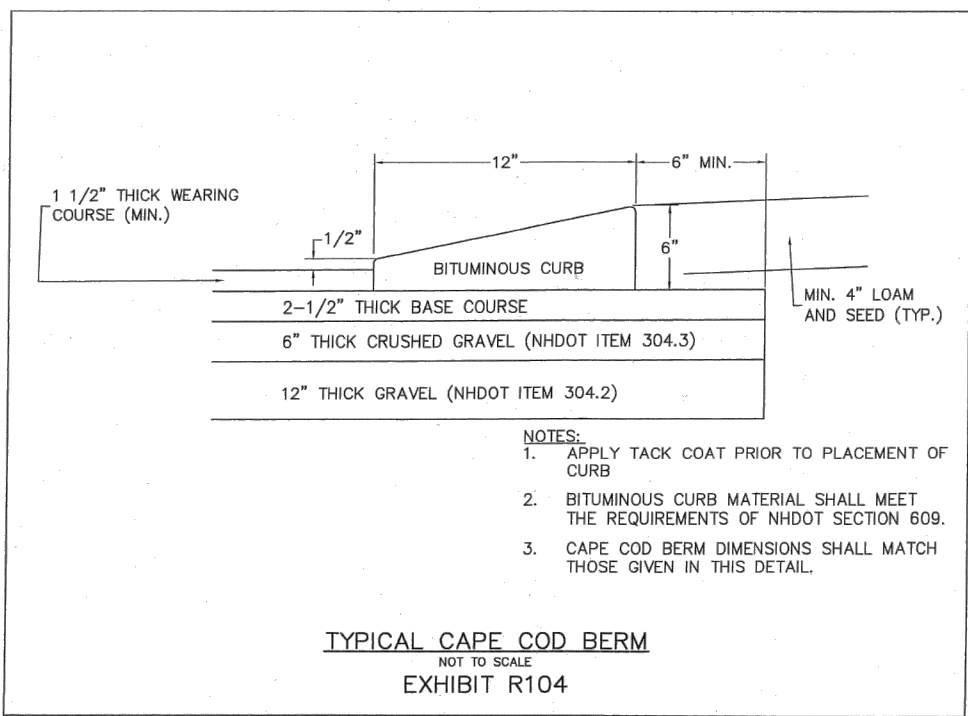


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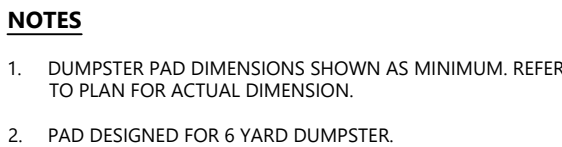
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 N.T.S. Source: VHB REV LD_512



Double Dumpster Pad w/ Enclosure			1/20
N.T.S.	Source: VHB	REV	LD 713



Dumpster Pad w/ Enclosure			1/20
N.T.S.	Source: VHB	REV	LD 713



The Brickyard Residential Development

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Permitting May 10, 2024

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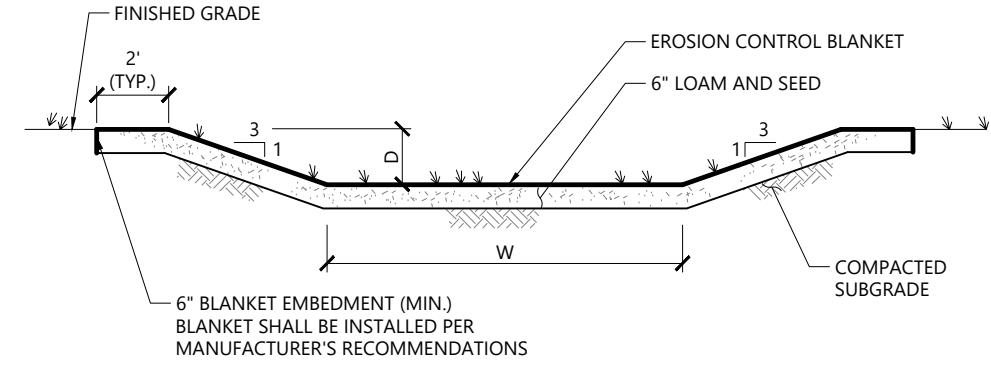
Detail Sheet 2

Drawing Number

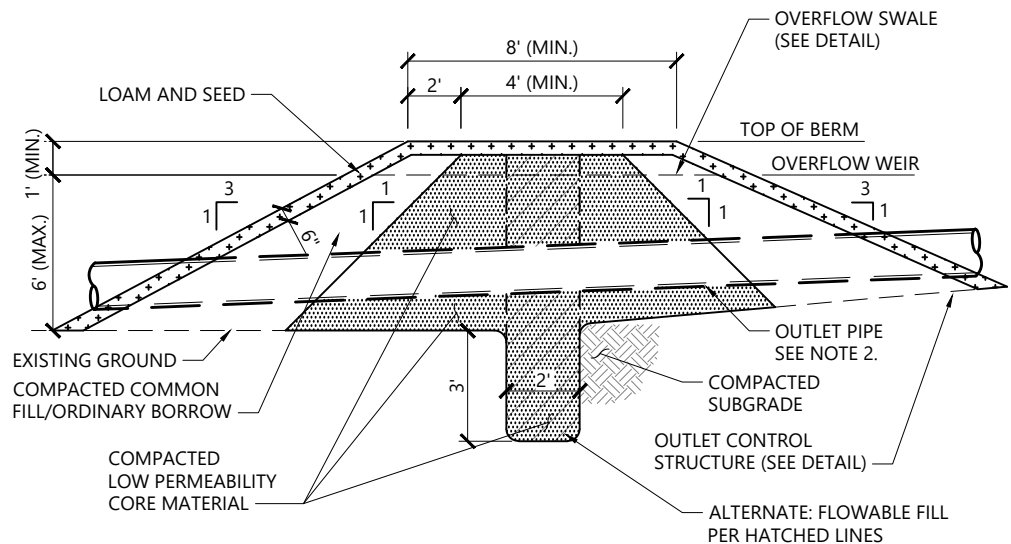
C7.2

22 26

SWALE TABLE		
SWALE DESIGNATION	W	D
Stormwater Swale #1	5'	2.5'

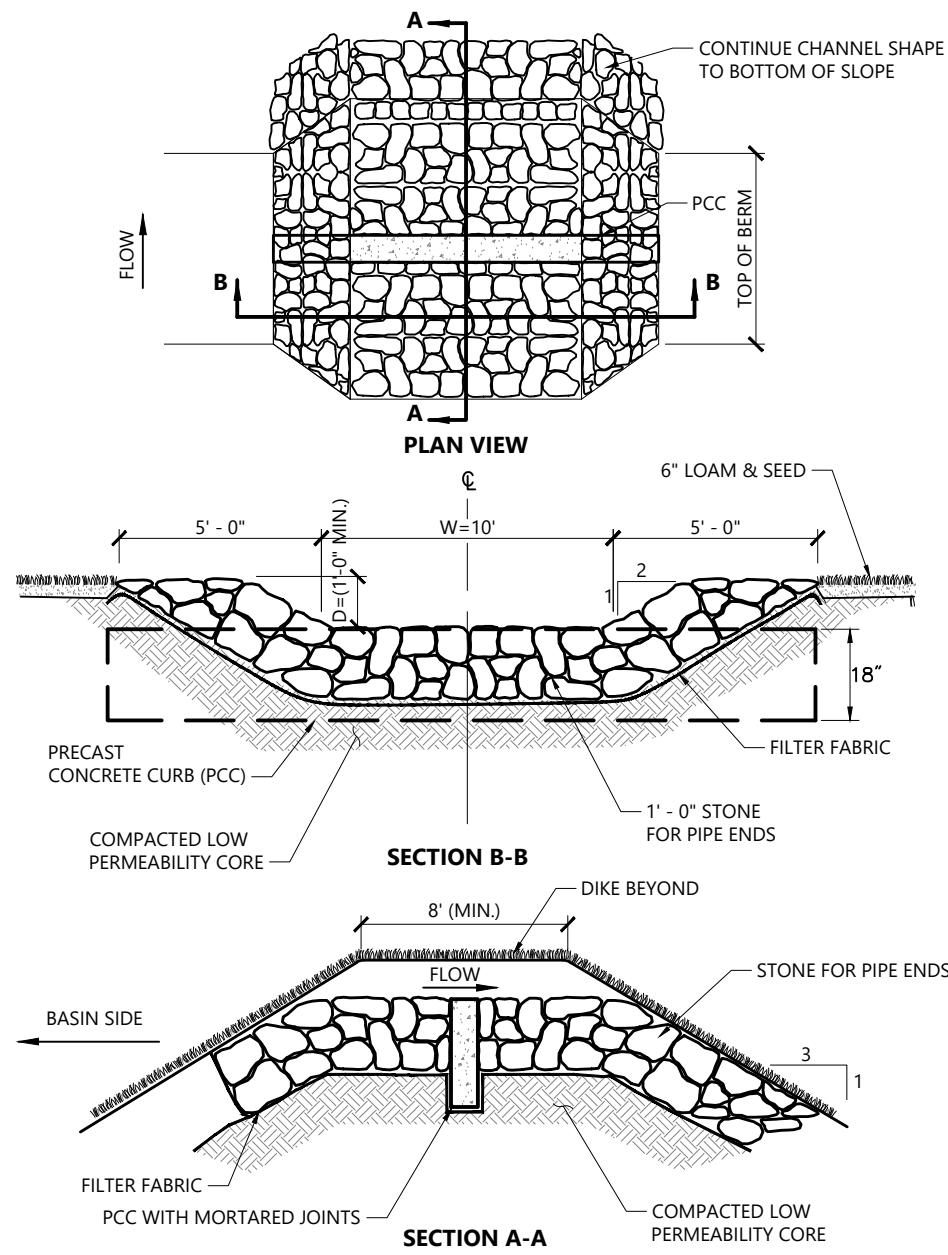


Grassed Swale 2/20
N.T.S. Source: VHB REV LD_171

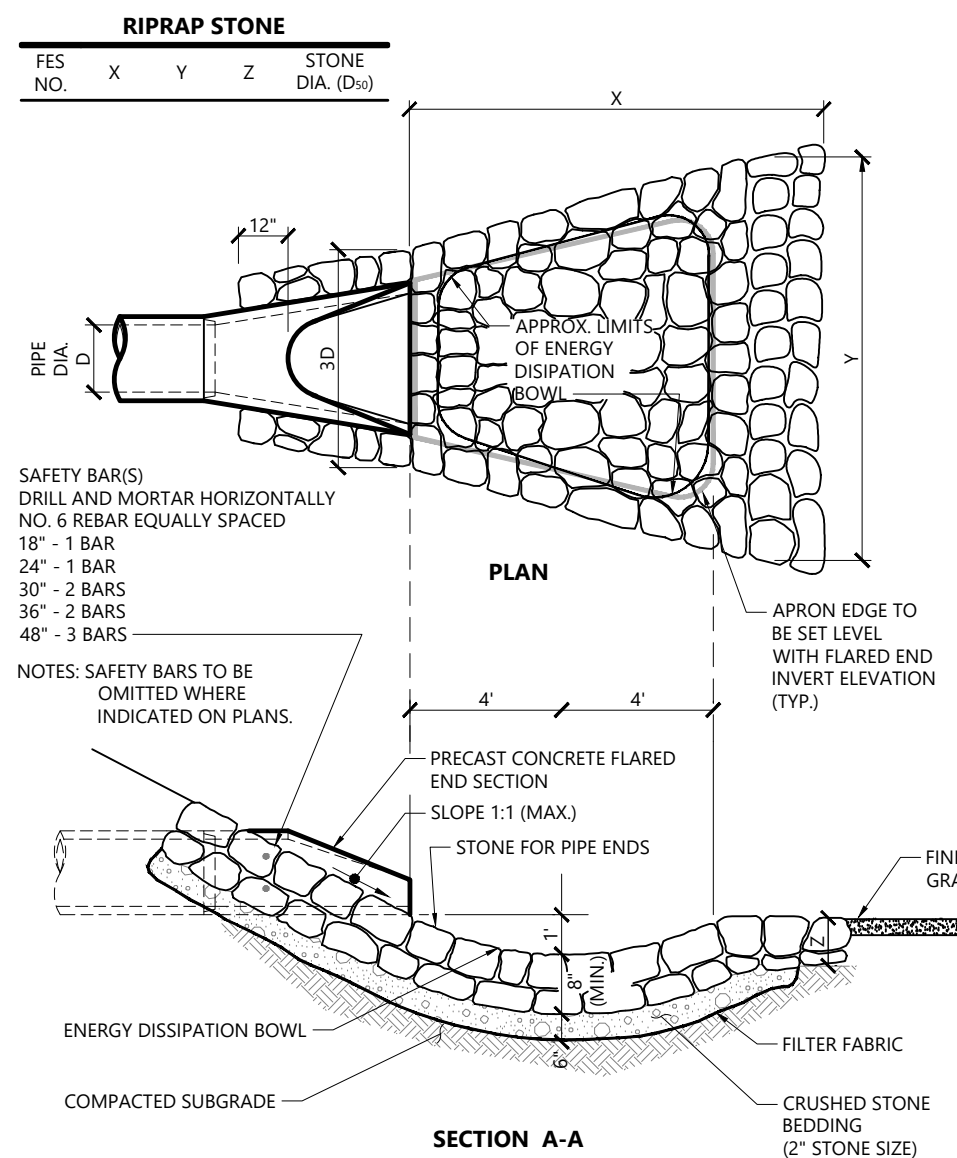


- NOTES**
- LOW PERMEABILITY CORE MATERIAL IS CONTINUOUS FOR THE FULL LENGTH OF THE EMBANKMENT.
 - WHERE PIPES PENETRATE THE LOW PERMEABILITY CORE, PIPE SHALL BE BEDDED IN THE LOW PERMEABILITY CORE MATERIAL.
 - THE BERM SECTION IS SUBJECT TO CHANGE AND WILL BE BASED ON THE RESULTS OF FURTHER GEOTECHNICAL INVESTIGATIONS.

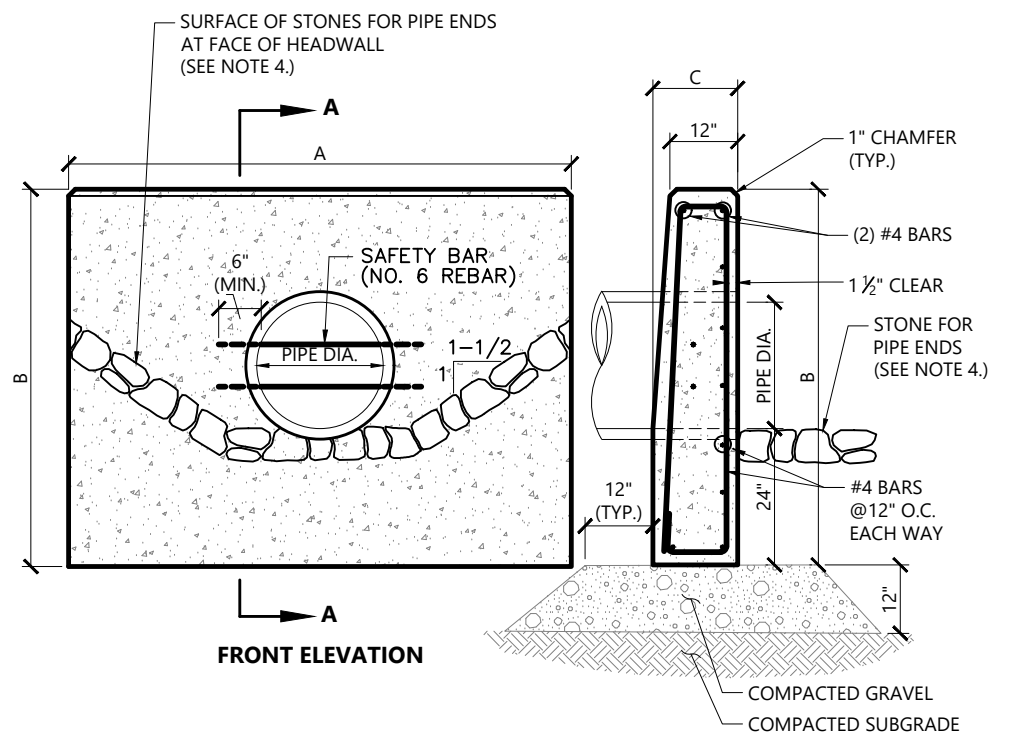
Detention Basin Berm Section 12/20
N.T.S. Source: VHB REV LD_160



Overflow Stone Swale 1/16
N.T.S. Source: VHB LD_161



Flared End Section (FES) with Stone Protection 3/19
N.T.S. Source: VHB REV LD_134

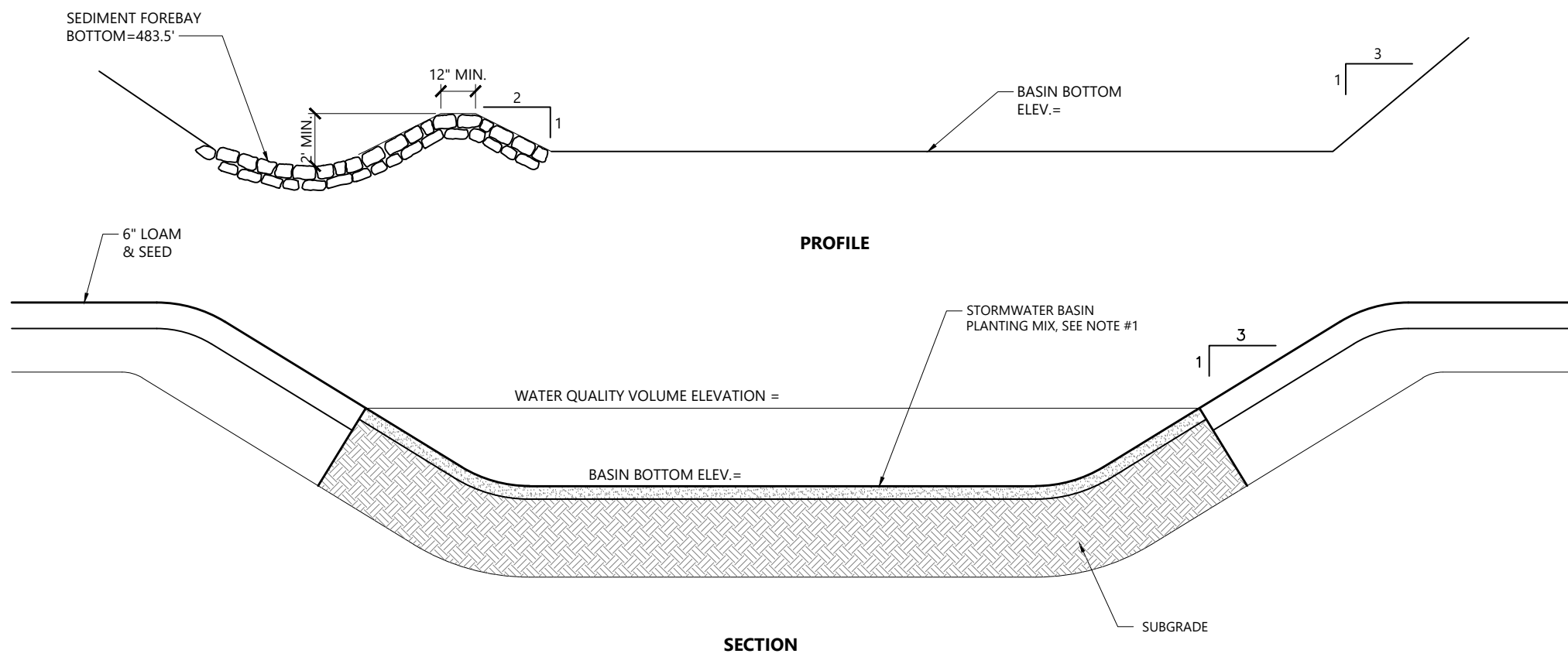


DIMENSIONAL TABLE				
PIPE DIA.	A	B	C	#OF SAFETY BARS
12"	5'-6"	4'-2"	1'-6"	-
15"	6'-6"	4'-5"	1'-6"	-
18"	7'-6"	4'-9"	1'-6"	1
24"	9'-0"	5'-3"	1'-6"	1
30"	11'-0"	5'-10"	1'-6"	2
36"	13'-0"	6'-4"	1'-9"	2
42"	15'-9"	6'-11"	1'-9"	3
48"	17'-9"	7'-5"	2'-0"	4
60"	21'-9"	8'-6"	2'-6"	4
72"	25'-9"	9'-7"	3'-0"	5

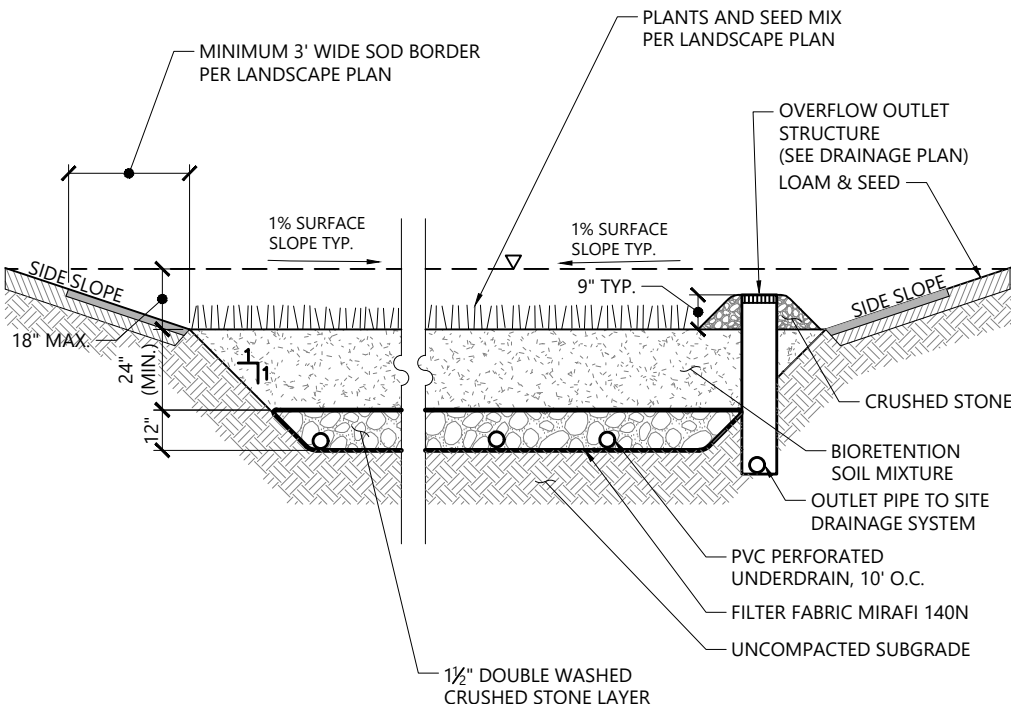
NOTES

- CONCRETE SHALL BE 6% ±1.5% AIR ENTRAINED TYPE II CEMENT WITH MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.
- SAFETY BARS TO BE OMITTED WHERE INDICATED ON PLANS.
- SAFETY BARS SHALL BE SET TO CREATE EQUAL OPENING DIMENSIONS.
- SEE STONE PROTECTION AT HEADWALL DETAIL.

Concrete Headwall (HW) 10/20
N.T.S. Source: VHB REV LD_130



Infiltration Basin 3/20
N.T.S. Source: VHB LD_199



- NOTES**
- INSTALL UNDERDRAINS AT 10 FEET ON CENTER. CONNECT TO DRAINS PER PLAN.
 - SIDE SLOPES SHALL BE 3:1 MAX. 2% MIN.

Bioretention Basin 3/20
N.T.S. Source: VHB REV LD_199

The Brickyard Residential Development

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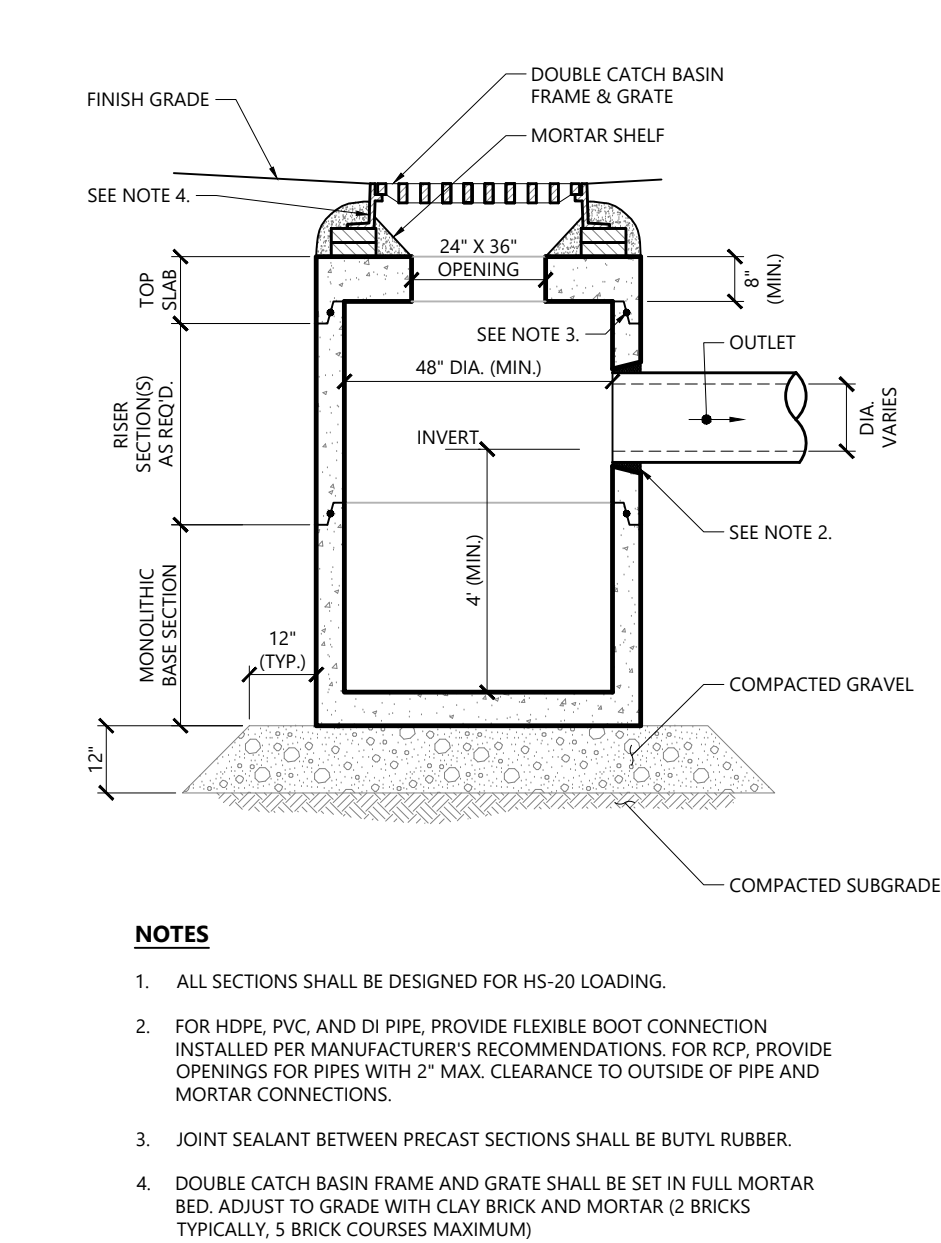
Designed by	Checked by
TMD	MJV
Issued for	Date
Permitting	May 10, 2024

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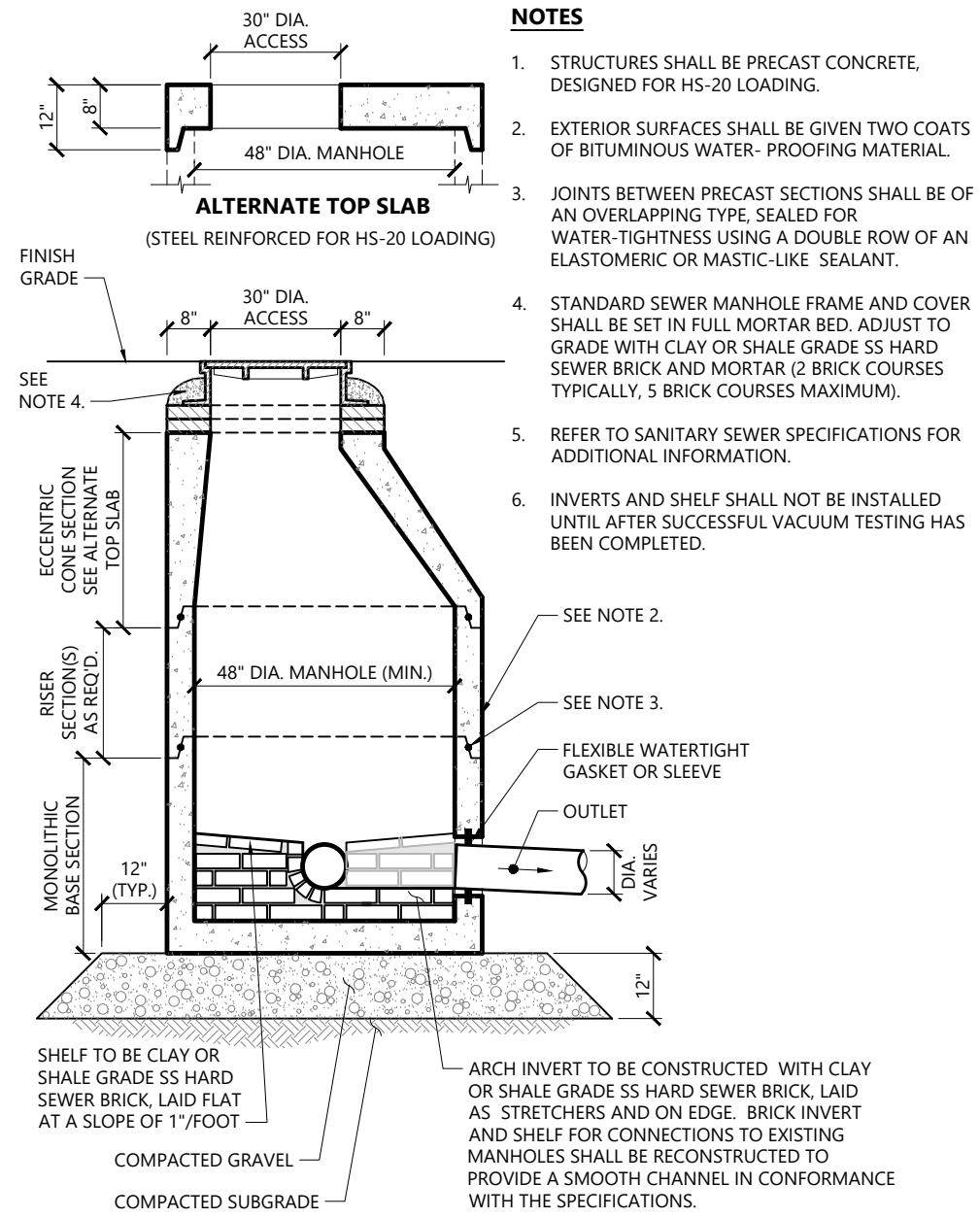
Drawing Title

Detail Sheet 3

Drawing Number

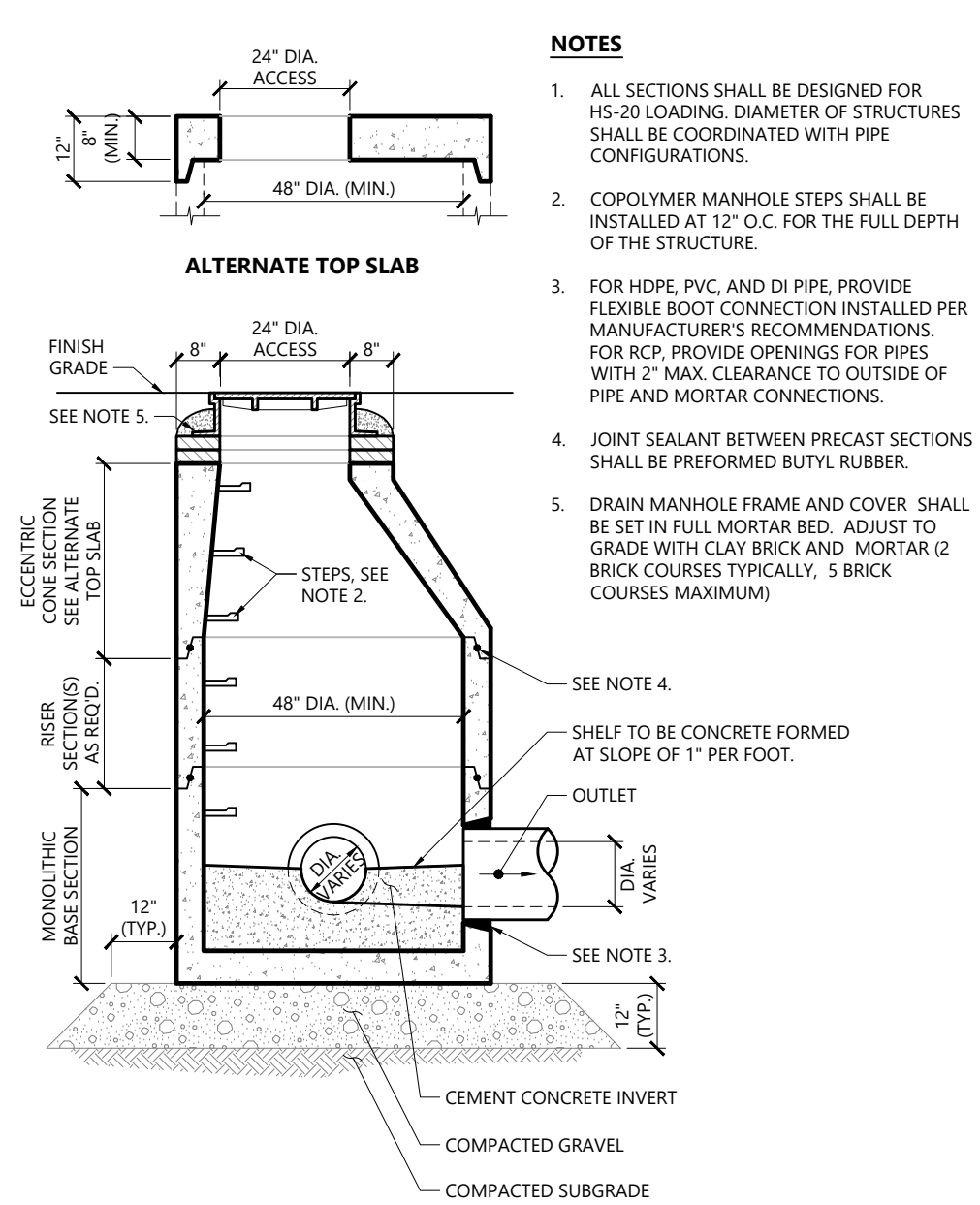


Double Grate Catch Basin (DCB) 11/19
 N.T.S. Source: VHB REV LD_102

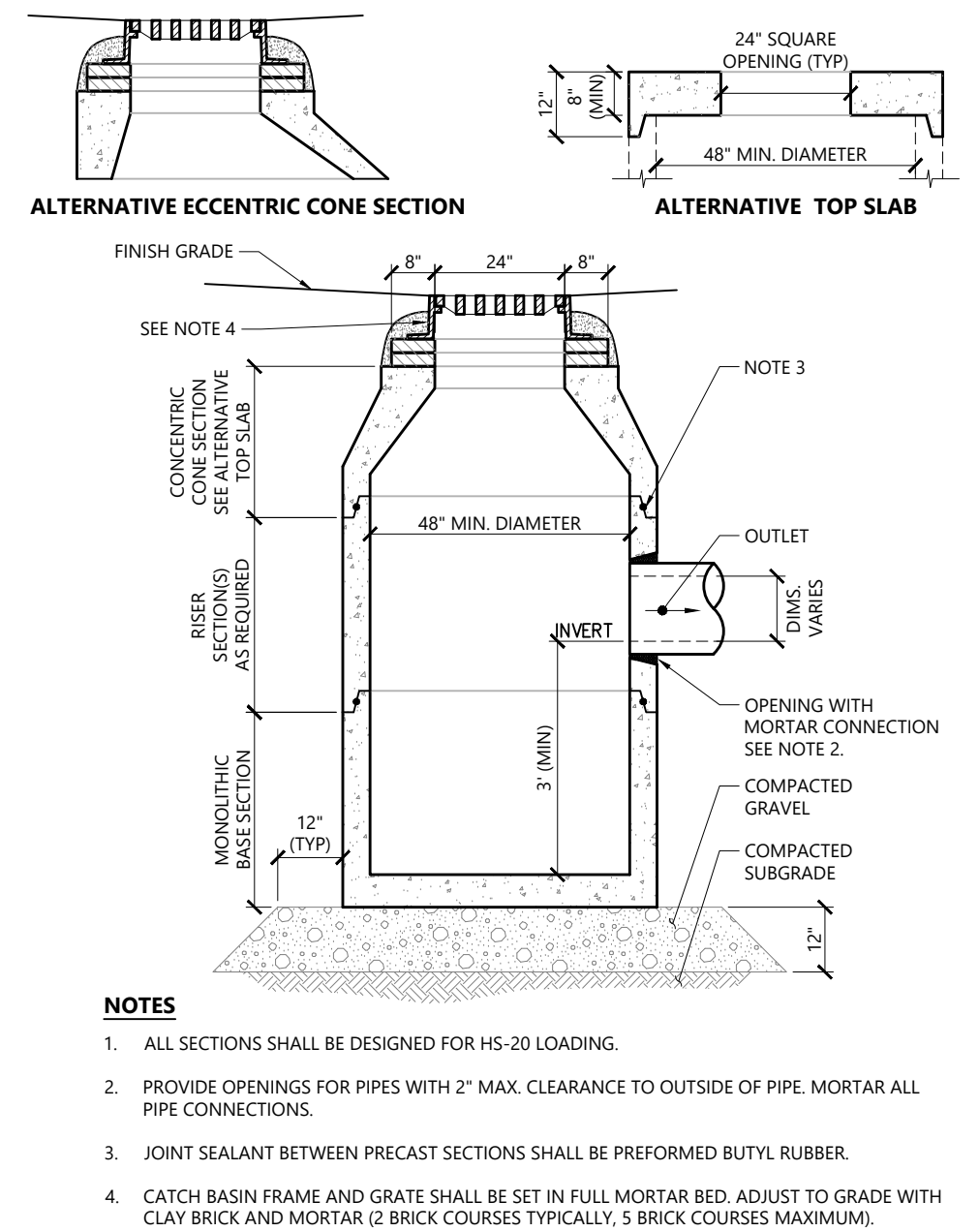


Sanitary Sewer Manhole (SMH) 1/16

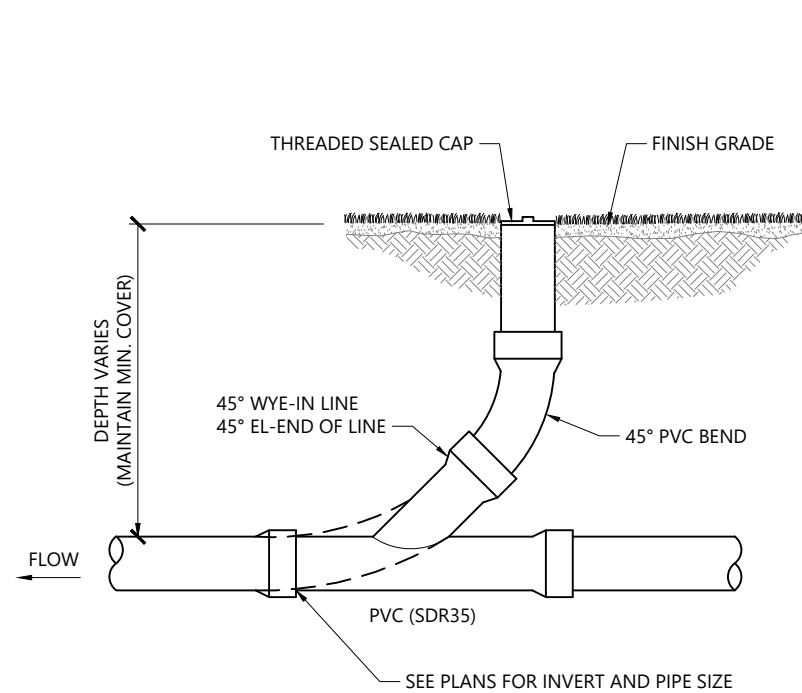
N.T.S. Source: VHB REV LD_200 NH



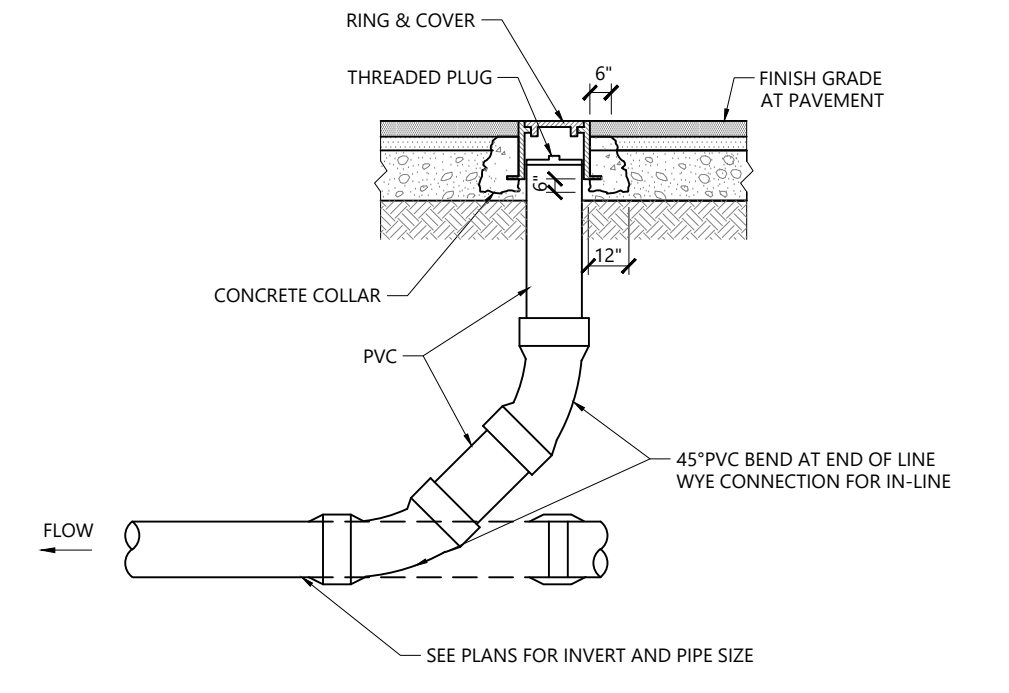
Drain Manhole (DMH)			11/19
N.T.S.	Source: VHB	REV	LD_115



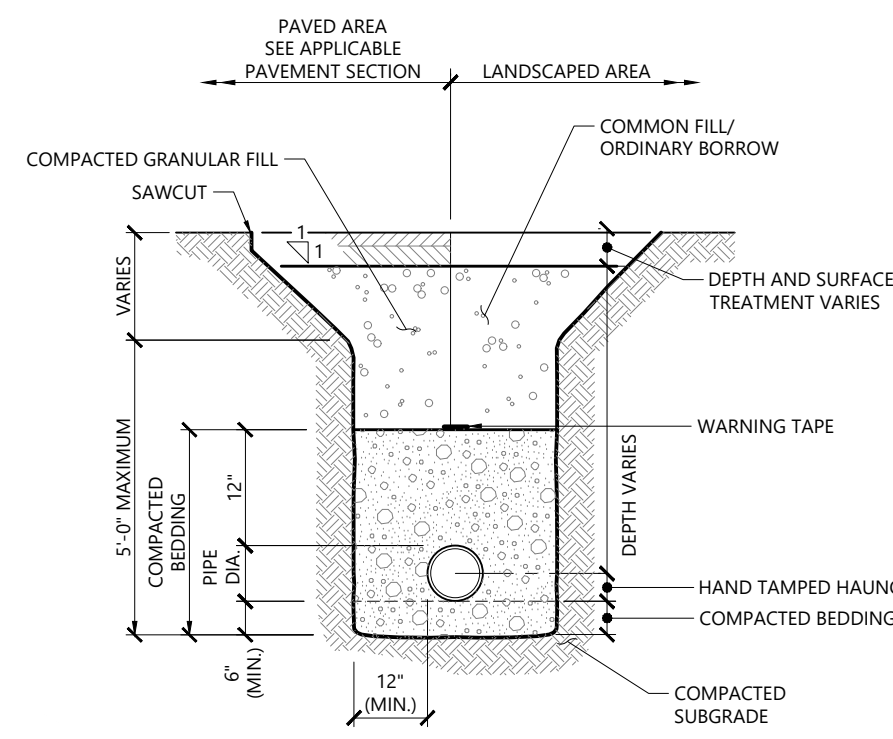
Catch Basin (CB) 1/16
 N.T.S. Source: VHB REV LD_100-NH



Cleanout - Landscape Area 1/16
 N.T.S. Source: VHB LD_302



Cleanout - Paved Area		1/16
N.T.S.	Source: VHB	LD_303



Utility Trench 11/19
 N.T.S. Source: VHB REV LD_300

[illegible]

The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

[illegible]

Not Approved for Construction

Drawing Title

Detail Sheet 4

Drawing Number

24 of 26

Project Number
52933.00

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4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)

NOTE: INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

MC-SERIES END CAP INSERTION DETAIL

NOTE: MANFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-7200 ISOLATOR ROW PLUS DETAIL

NOTE: INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT

- A. INSPECTION PORTS (IF PRESENT):
 - A.1. REMOVED/REPAIR OR ON MC-COLLAR NUTLINE DRAIN
 - A.2. REMOVE COVER AND INSPECT FOR ALGAE
 - A.3. USING A FLASHLIGHT AND STATION ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (IF AVAILABLE)
 - A.5. REMOVE COVER AND/OR ABOVE IF 30" MIN PROCEEDS TO STEP 2 IF NOT, PROCEED TO STEP 3
- B. ALL ISOLATOR PLUS ROWS
 - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - B.3. REMOVED OR/UPLES OR CAMERAS MAY BE USED TO AVOID A COMFOTED SPACE BURET
 - B.4. FOLLOW OR ROW REGULARLY FOR COMPARISON OF SEDIMENT BUILDUP MANIFOLD
 - B.5. IF SEDIMENT IS AT, OR ABOVE 3" 30" MIN PROCEEDS TO STEP 2 IF NOT, PROCEED TO STEP 3

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETAC PROCESS

- A. ATTACHED JETAC CLEANING NOZZLE WITH HEAVY FACING SPREAD OF 45° (1 MI) MORE IS REQUIRED
- B. APPLY MULTIPLE PASSES OF JETAC UNTIL BACKFLOUGH WATER IS CLEAN
- C. VACUUM STRUCTURE DUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LOGS, RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLLS UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION, ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATION OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS
2. CONDUCT JETTING AND VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

ACCEPTABLE FILL MATERIALS: STORMTECH MC-200 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	ASPH/ST MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL MATERIAL: FOR LAYER 1 STARTS FROM THE TOP OF THE L1 LAYER TO THE BOTTOM OF FINISH GRADE OR UNPAVED FINISHED GRADE SURFACE THAT PAVEMENT SUBBASE MAY BE PART OF THE L1 LAYER	ANY SOURCE MATERIAL, NATIVE SOIL, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBBASE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PLANS PLACEMENTS MAY HAVE INDETERMINATE AND PREPARATION REQUIREMENTS.
	INITIAL FILL FILL MATERIAL: FOR LAYER 1 STARTS FROM THE TOP OF THE EMBEDEDMENT STONE (L1 LAYER) TO 4" (100mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE L1 LAYER	GRANULAR, WELL-GRADED SUBGRADE/GEOTECHTURES, <0% FINES OR PROGRESS ADDITION	ASPH/ST M3 A1, A1.5, A-2, A-3 OR ASPH/ST M4 3.951, 4.46, 5.9, 56, 57, 58, 59, 68, 7, 8, 9, 10	BEGIN COMPACTING AFTER 4" (100mm) OF MATERIAL OVER THE CHAMBER IS REACHED. COMPACTION ADDITIONAL LAYERS OF 2" (50mm) MAX LAYERS TO AVOID OVER-IMPACTOR DENSITY FOR WELL-GRADED MATERIALS. CHECK WITH THE SUBGRADER FOR PROGRESS ADDITION MATERIAL.
C	EMBEDEDMENT STONE: FILL SUBGRADE/GEOTECHTURES THE CHAMBERS FROM THE FOUNDATION STONE (L1 LAYER) TO THE L1 LAYER ABOVE	CLEAN, CRUSHED, ANGULAR STONE	ASPH/ST M3 ¹	NO COMPACTION REQUIRED.
B	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER	CLEAN, CRUSHED, ANGULAR STONE	ASPH/ST M3 ¹ 3.4	FLAT COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE ¹¹

PLEASE NOTE:
 1. THE LISTED ACCEPTABLE DESIGNATIONS ARE FOR ORIGINATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR, FOR EXAMPLE, A SPECIFICATION FOR #16 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 16 (4.75MM) MAX STONE".
 2. IF THE CHAMBER REQUIREMENTS ARE NOT MET, THE CHAMBER MUST BE REPLACED WITH ANOTHER CHAMBER. THE CHAMBER MUST BE REPLACED WITH ANOTHER CHAMBER. THE CHAMBER MUST BE REPLACED WITH ANOTHER CHAMBER.
 3. WHERE INFILTRATION LAYERS MAY BE COMPRESSED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY MANUAL OR DRAGGING OR THROUGH EQUIPMENT. FOR SPECIAL, LOAD DESIGNS, CONTACT STORMTECH FOR CORRECTION RECOMMENDATIONS.
 4. ONCE LAYER C IS PLACED, ANY SOLIDMATERIAL, CAN BE PLACED IN LAYER C UP TO THE FINISHED GRADE. CLEAN, CRUSHED, ANGULAR SOLIDS CAN BE USED TO REPLACE THE MATERIAL, REQUIREMENTS OF LAYER C OR D¹ AT THE SITE DESIGN ENGINEER'S DISCRETION.

The diagram illustrates a cross-section of a stormwater collection chamber. The layers are labeled A through D, with A being the foundation stone and D being the final fill. The chamber is shown with a height of 24" (610mm) and a width of 12" (305mm). The subgrade is shown below the chamber, with a depth of 12" (305mm) minimum. The pavement layer is shown above the chamber, with a thickness of 6" (152mm) minimum. The diagram also shows the location of the chamber relative to the subgrade and the pavement. A note indicates that the depth of stone is to be determined by site design engineering (230mm min).

NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2781, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION Bx5v1
- MC-200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2781 "STANDARD SPECIFICATION FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSURING THE BEARING CAPACITY, ALLOWABLE BEARING CAPACITY OF THE SUBGRADE SOLID AND THE DENSITY OF FOUNDATION STONE WITH CORRECTIONS FOR THE RANGE OF DESIGNED LOADS/TRAFFIC CONDITIONS.
- INTERMITTENT STONE SHALL BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL, AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION
 - TO MAXIMIZE THE BENEFIT OF CHAMBERS SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTERL, INTERLOCKING JOINTS/LOGS.
 - TO INSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1".
 - TO INSURE THE INTEGRITY OF THE ARCH EFFECT, RESISTANCE AT THE ARCH EFFECT, RESISTANCE AT THE ARCH EFFECT SHALL BE GREATER THAN OR EQUAL TO 500 LB/FT².
 - AND TO RESIST CHAMBER INFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES ABOVE 75° F / 23° C, CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1

MC-200 CROSS SECTION DETAIL

Subsurface Detention/Infiltration System (StormTech MC-7200)
N.T.S.

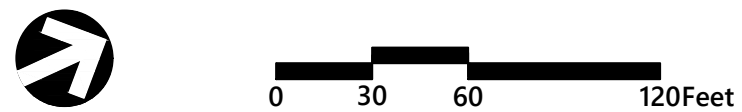
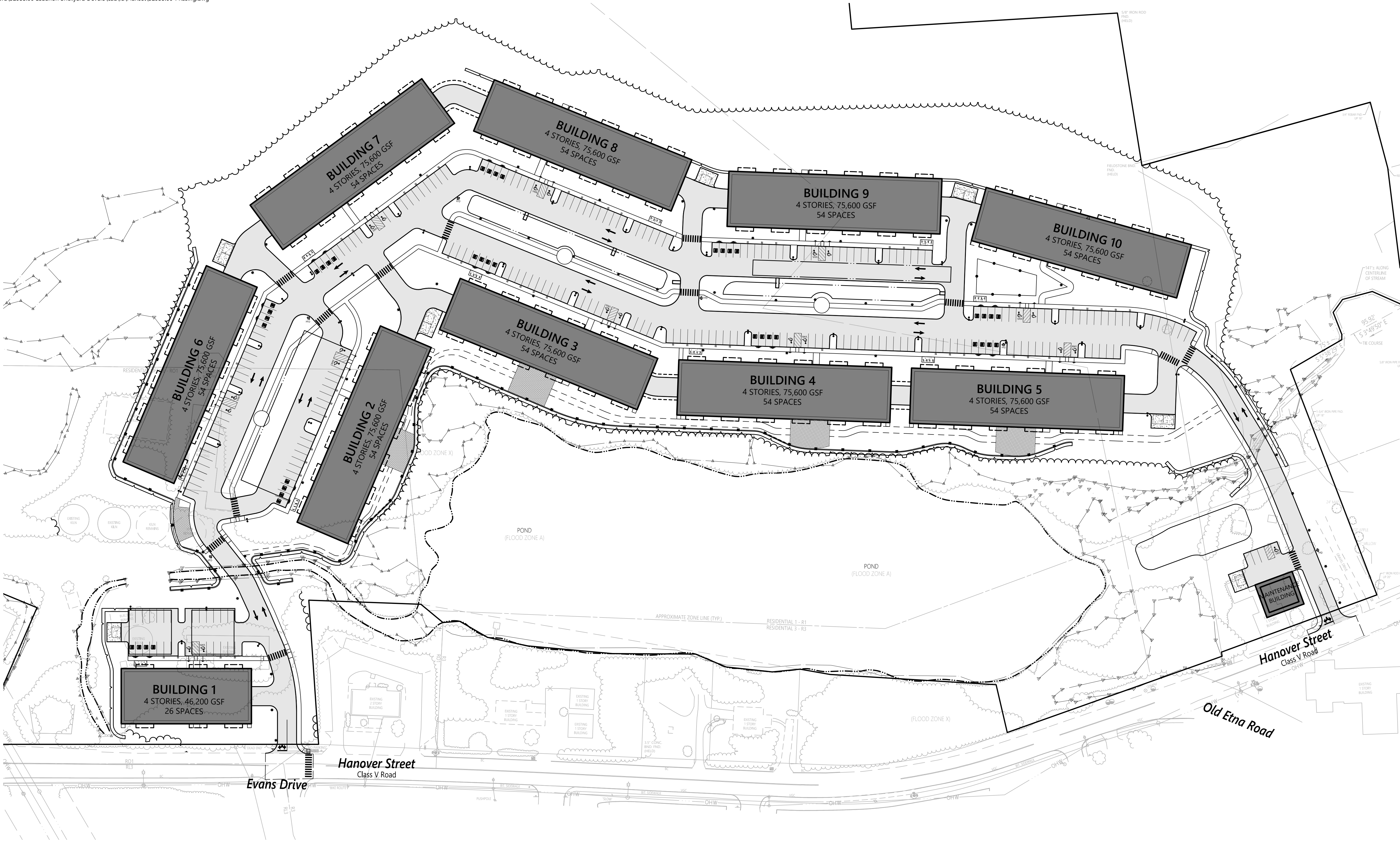
Source: Stormtech

Project Number
52933.00

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2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900



The Brickyard Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

No.	Revision	Date	Appr'd.
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Designed by	TMD	Checked by	MJV
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Issued for		Date	
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Permitting May 10, 2024

Not Approved for Construction

Drawing Title
Phasing Plan

Drawing Number



PP-1

Sheet 26 of 26

Project Number
52933.00

Phasing Schedule

Phase	Summary Of Improvements
Phase 1	Roadway, Utilities, Parking Lots
Phase 2	Maintenance Building, Building 1
Phase 3	Building 6
Phase 4	Building 2
Phase 5	Building 7
Phase 6	Building 3
Phase 7	Building 8
Phase 8	Building 4
Phase 9	Building 9
Phase 10	Building 10

Note

THE INTENT OF THE PHASING OF THE PROJECT IS TO INITIALLY CONSTRUCT THE NECESSARY ROADWAYS, UTILITY INFRASTRUCTURE AND BUILDING FOUNDATIONS. THE BUILDINGS WILL THEN BE CONSTRUCTED AND OCCUPIED SEQUENTIALLY. THE PRELIMINARY SCHEDULE PROVIDED REPRESENTS THE CURRENT UNDERSTANDING OF THE INTENDED PHASING.

Planting Notes

- ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
- NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICT.
- A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
- FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.
- ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED BY LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
- ALL PLANT MATERIALS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND CONTRACT DOCUMENTS.
- ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
- AREAS DESIGNATED "LOAM & SEED" SHALL RECEIVE MINIMUM 6" OF LOAM AND SPECIFIED SEED MIX. LAWNS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
- ALL DISTURBED AREAS NOT OTHERWISE NOTED ON CONTRACT DOCUMENTS SHALL BE LOAM AND SEEDED OR MULCHED AS DIRECTED BY OWNER'S REPRESENTATIVE.
- THIS PLAN IS INTENDED FOR PLANTING PURPOSES. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

Plant Maintenance Notes

- CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR NEW LAWNS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
- CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE CONTRACTOR.
- WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.
- WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
- CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.

Planting Requirements

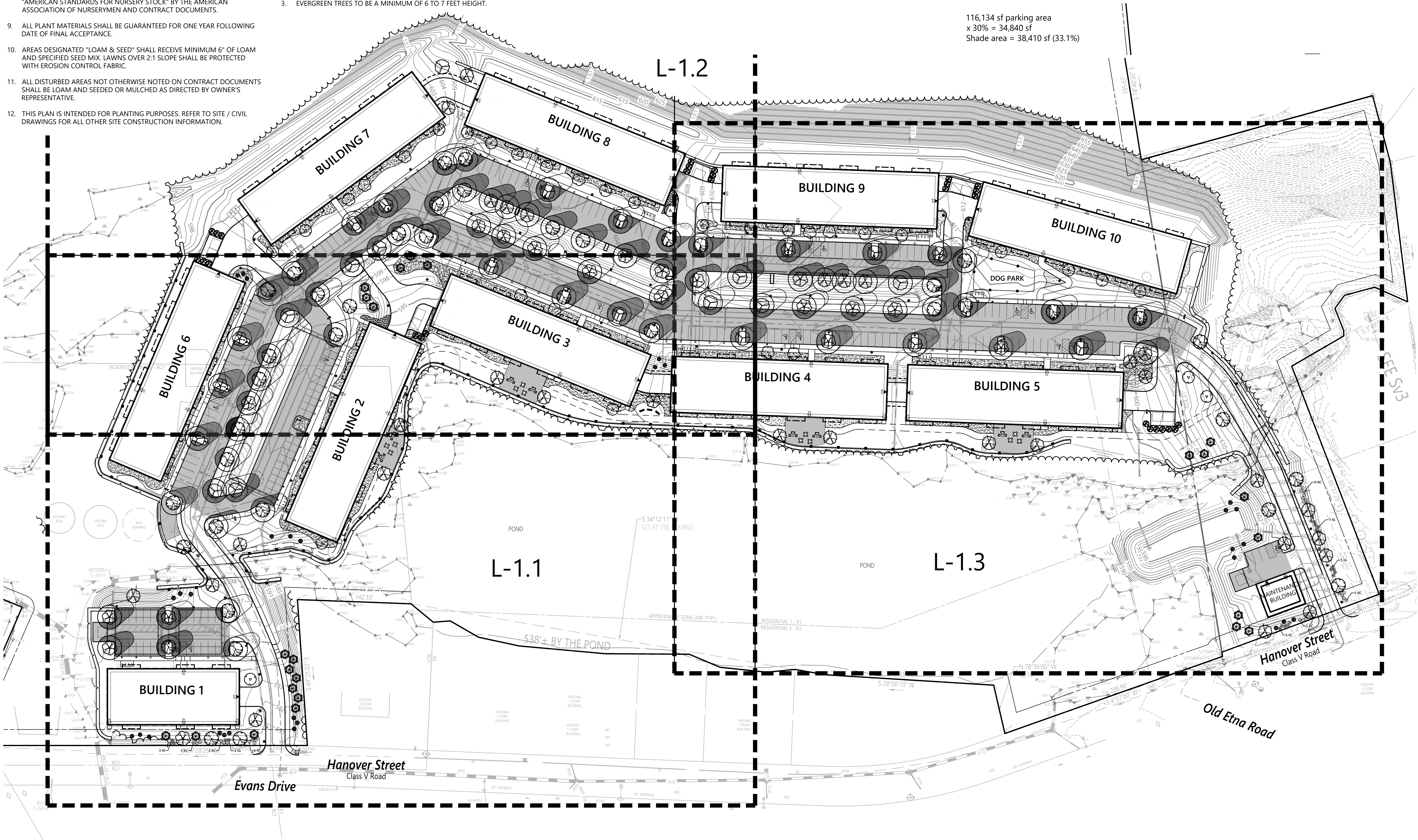
- AREAS CONTAINING ONE OR TWO ROWS OF PARKING SHALL BE PLANTED WITH DECIDUOUS TREES ALONG THE PERIMETER, SO PLACED TO SHADE 30% OF THE PARKING AREA.
PARKING AREA = 116,134 SF x 30% = 34,840 SF
SHADE AREA = 38,410 SF (33.1%)
- DECIDUOUS TREES TO BE A MINIMUM 2.5 TO 3 INCHES IN CALIPER.
- EVERGREEN TREES TO BE A MINIMUM OF 6 TO 7 FEET HEIGHT.

SHRUBS, GRASSES AND PERENNIALS SHALL BE A SELECTION OF:

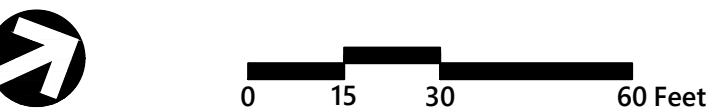
CODE	BOTANICAL NAME	COMMON NAME
SHRUBS		
CAH	Clethra alnifolia 'Hummingbird'	'Hummingbird' Summersweet
CAE	Cornus alba 'Elegantissima'	Variegated RedTwig Dogwood
CR	Cornus racemosa	Gray Dogwood
CS	Cornus sericea	Red Twig Dogwood
CS1	Cornus stolonifera	Red Osier Dogwood
FG	Fothergilla gardenii	Dwarf Fothergilla
IG	Ilex glabra	Inkberry
IGS	Ilex glabra 'Shamrock'	Shamrock Inkberry
IVR	Ilex verticillata 'Red Sprite'	Red Sprite Winterberry
JBH	Juniperus horizontalis 'Bar Harbor'	Bar Harbor Creeping Juniper
RC	Rhododendron x 'Cunningham's Blush'	Cunningham's Blush Rhododendron
RA	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac
VN	Viburnum nudum 'Winterthur'	Smooth Witherod
GRASSES		
PVS	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass
PERENNIALS		
H-SO	Hemerocallis x 'Stella de Oro'	Stella de Oro Daylily

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE
DECIDUOUS TREES				
AR	41	Acer rubrum	Red Maple	2 1/2 - 3" CAL.
BN	32	Betula nigra 'Heritage'	Heritage River Birch	10 - 12' HT./Multi-Stem
NS	22	Nyssa sylvatica	Black Tupelo	2 1/2 - 3" CAL.
TA	21	Tilia americana	American Linden	2 1/2 - 3" CAL.
EVERGREEN TREES				
JVB	9	Juniperus virginiana 'Blue Arrow'	Blue Arrow Juniper	6 - 7' HT.
JVC	18	Juniperus virginiana 'Corcorcor' TM	Emerald Sentinal Juniper	6 - 7' HT.
PG	21	Picea glauca	White Spruce	6 - 7' HT.
TO	28	Thuja occidentalis 'Nigra'	Dark American Arborvitae	6 - 7' HT.
FLOWERING TREES				
ACS	23	Amelanchier canadensis	Shadblow Serviceberry	8 - 10' HT./Multi-Stem
MS	11	Malus hybrid 'Spring Snow'	Spring Snow Crab Apple	2 1/2 - 3" CAL.
SHRUBS				
IG	22	Ilex glabra	Inkberry	2 - 3' HT.
RC	29	Rhododendron x 'Cunningham's Blush'	Cunningham's Blush Rhododendron	24 - 30" HT.



116,134 sf parking area
x 30% = 34,840 sf
Shade area = 38,410 sf (33.1%)



74 Hanover Street Extension
Lebanon, New Hampshire 03766

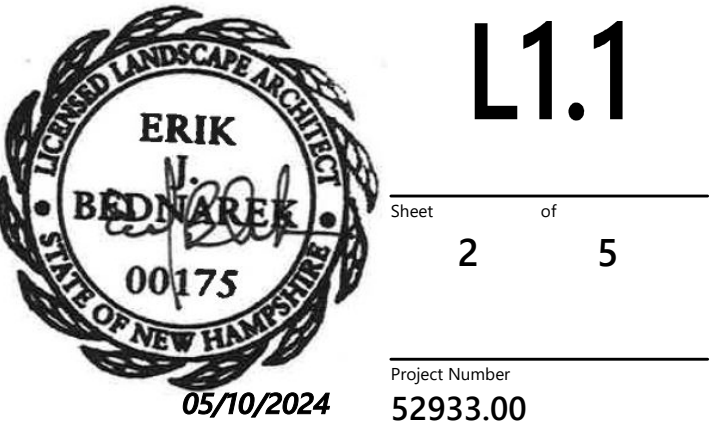
Revision	Date	Apprvd.
Designed by EJB	Checked by	
Dated for Permitting	Date May 10, 2024	

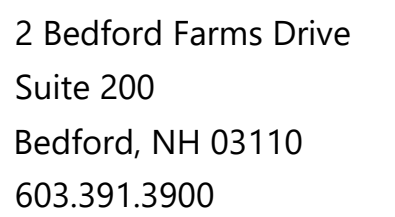
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Drawing Title

Landscape

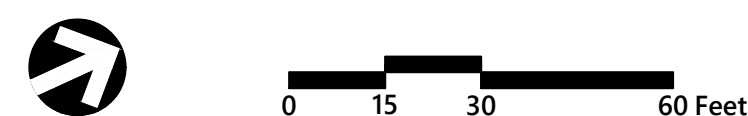
Plan 1





FLOWERING TREES		
ACS	Amelanchier canadensis	Shadblow Serviceberry
MS	Malus hybrid `Spring Snow`	Spring Snow Crab Apple
PF	Prunus sargentii `Pink Flair`	Sargent Cherry

NOTE:
SEE SHEET L1.0 FOR PLANT SCHEDULE WITH QUANTITIES AND SIZES.



174 Hanover Street Extension
Lebanon, New Hampshire 03766

Designed by	Checked by
EJB	

Permitting May 10, 2024

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Landscape Plan 2

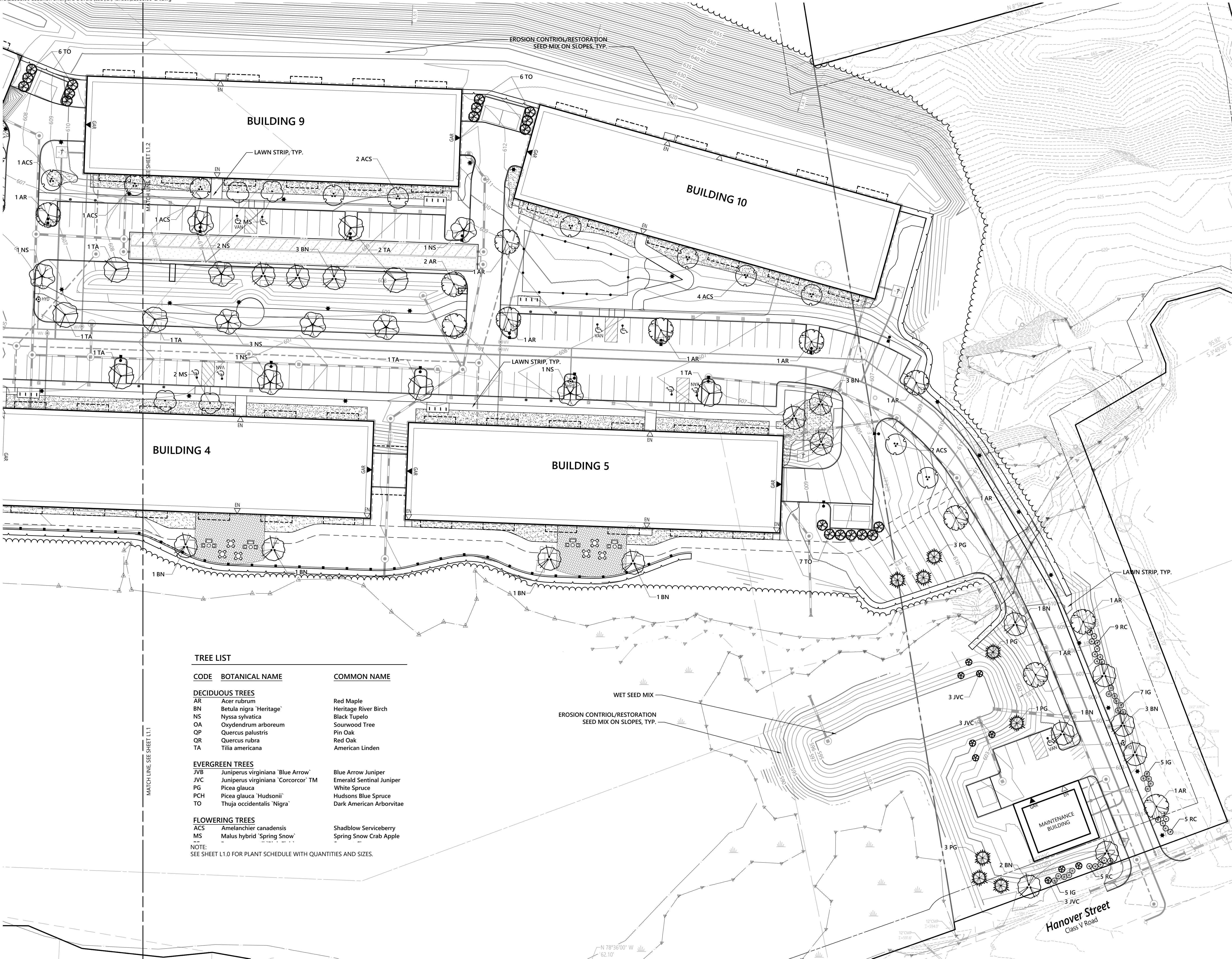


Sheet 3 of 5

Project Number
52933.00



2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900



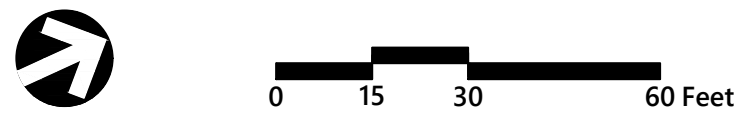
TREE LIST

CODE	BOTANICAL NAME	COMMON NAME
DECIDUOUS TREES		
AR	Acer rubrum	Red Maple
BN	Betula nigra 'Heritage'	Heritage River Birch
NS	Nyssa sylvatica	Black Tupelo
OA	Oxydendrum arboreum	Sourwood Tree
QP	Quercus palustris	Pin Oak
QR	Quercus rubra	Red Oak
TA	Tilia americana	American Linden

EVERGREEN TREES		
JVB	Juniperus virginiana 'Blue Arrow'	Blue Arrow Juniper
JVC	Juniperus virginiana 'Corcorcor' TM	Emerald Sentinel Juniper
PG	Picea glauca	White Spruce
PCH	Picea glauca 'Hudsonii'	Hudsons Blue Spruce
TO	Thuja occidentalis 'Nigra'	Dark American Arborvitae

FLOWERING TREES		
ACS	Amelanchier canadensis	Shadblow Serviceberry
MS	Malus hybrid 'Spring Snow'	Spring Snow Crab Apple

NOTE:
SEE SHEET L1.0 FOR PLANT SCHEDULE WITH QUANTITIES AND SIZES.



The Brickyard
Residential Development

174 Hanover Street Extension
Lebanon, New Hampshire 03766

No.	Revision	Date	Appr'd.

Designed by EJB
Checked by

Issued for Permitting
Date May 10, 2024

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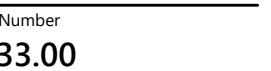
Drawing Title
Landscape
Plan 3

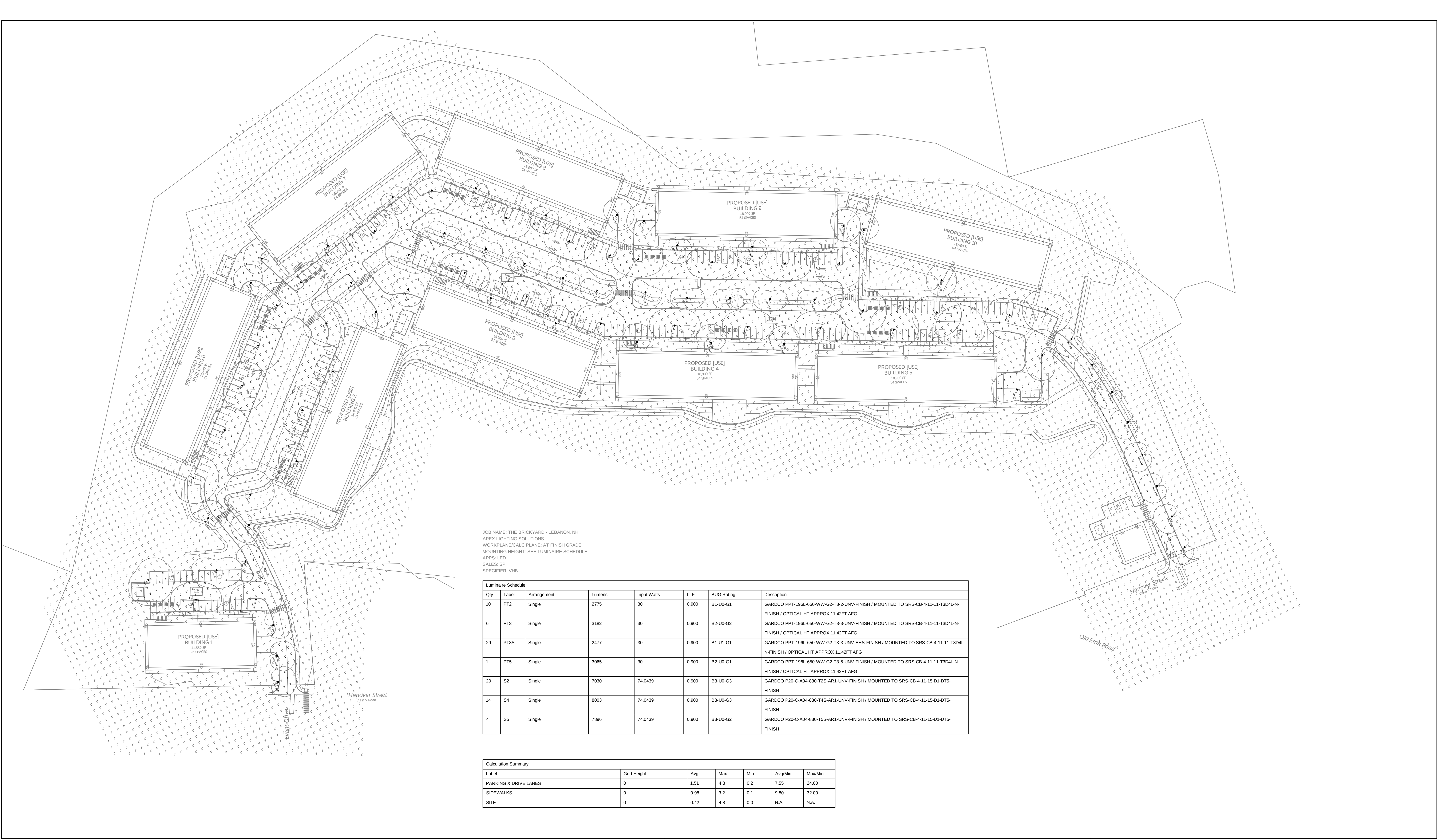


L1.3

Sheet 4 of 5

Project Number
52933.00





JOB NAME: THE BRICKYARD - LEBANON, NH
APEX LIGHTING SOLUTIONS
WORKPLANE/CALC PLANE: AT FINISH GRADE
MOUNTING HEIGHT: SEE LUMINAIRE SCHEDULE
APPS: LED
SALES: SP
SPECIFIER: VHB

Luminaire Schedule							
Qty	Label	Arrangement	Lumens	Input Watts	LLF	BUG Rating	Description
10	PT2	Single	2775	30	0.900	B1-U0-G1	GARDCO PPT-196L-650-WW-G2-T3-2-UNV-FINISH / MOUNTED TO SRS-CB-4-11-11-T3D4L-N-FINISH / OPTICAL HT APPROX 11.42FT AFG
6	PT3	Single	3182	30	0.900	B2-U0-G2	GARDCO PPT-196L-650-WW-G2-T3-3-UNV-FINISH / MOUNTED TO SRS-CB-4-11-11-T3D4L-N-FINISH / OPTICAL HT APPROX 11.42FT AFG
29	PT3S	Single	2477	30	0.900	B1-U1-G1	GARDCO PPT-196L-650-WW-G2-T3-3-UNV-EHS-FINISH / MOUNTED TO SRS-CB-4-11-11-T3D4L-N-FINISH / OPTICAL HT APPROX 11.42FT AFG
1	PT5	Single	3065	30	0.900	B2-U0-G1	GARDCO PPT-196L-650-WW-G2-T3-5-UNV-FINISH / MOUNTED TO SRS-CB-4-11-11-T3D4L-N-FINISH / OPTICAL HT APPROX 11.42FT AFG
20	S2	Single	7030	74.0439	0.900	B3-U0-G3	GARDCO P20-C-A04-830-T2S-AR1-UNV-FINISH / MOUNTED TO SRS-CB-4-11-15-D1-DT5-FINISH
14	S4	Single	8003	74.0439	0.900	B3-U0-G3	GARDCO P20-C-A04-830-T4S-AR1-UNV-FINISH / MOUNTED TO SRS-CB-4-11-15-D1-DT5-FINISH
4	S5	Single	7896	74.0439	0.900	B3-U0-G2	GARDCO P20-C-A04-830-T5S-AR1-UNV-FINISH / MOUNTED TO SRS-CB-4-11-15-D1-DT5-FINISH

Calculation Summary						
Label	Grid Height	Avg	Max	Min	Avg/Min	Max/Min
PARKING & DRIVE LANES	0	1.51	4.8	0.2	7.55	24.00
SIDEWALKS	0	0.98	3.2	0.1	9.80	32.00
SITE	0	0.42	4.8	0.0	N.A.	N.A.

GENERAL DISCLAIMER:

Calculations have been performed according to IES standards and good practice. Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.

* LLF Determined Using Current Published Lamp Data

NOTE TO REVIEWER:

Total Light Loss Factor (LLF) applied at time of design is determined by applying the Lamp Lumen Depreciation (LLD) from current lamp manufacturer's catalog, a Luminaire Dirt Depreciation Factor (LDD) based on IES recommended values and a Ballast Factor (BF) from current ballast specification sheets. Application of an incorrect Light Loss Factor (LLF) will result in forecasts of performance that will not accurately depict actual results.

For proper comparison of photometric layouts, it is essential that you insist all designers use correct Light Loss Factors.



20-30 BEAVER ROAD, WETHERSFIELD, CT 06109
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PROJECT TITLE:

THE BRICKYARD
LEBANON, NH

DRAWING TITLE:

SITE LIGHTING
PHOTOMETRIC CALCULATION

SCALE : 1"=60'-0"

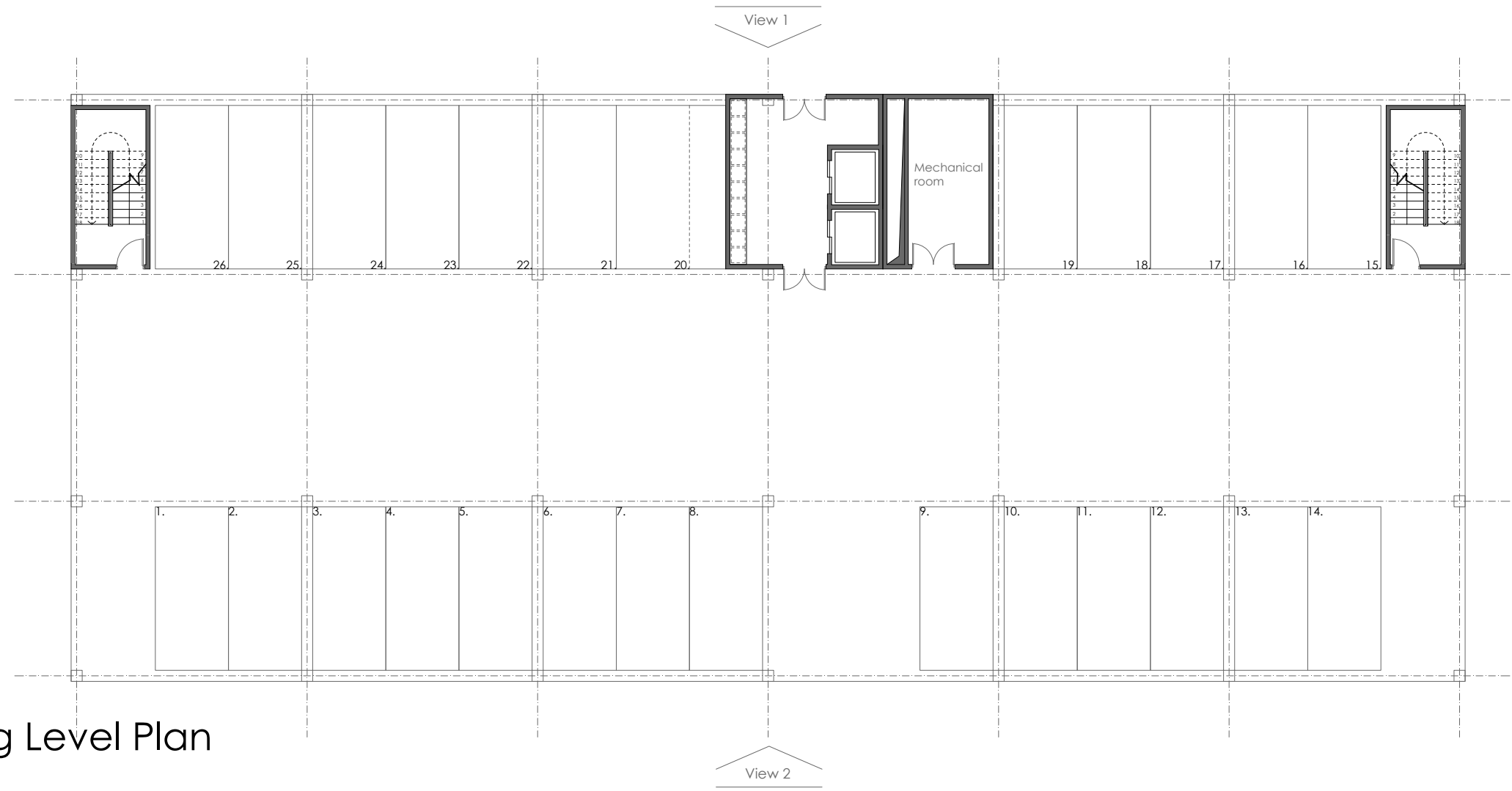
DATE: 5/9/24

DRAWN BY: LED

SHEET:

SL-1A

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BUILDING 1 | Parking Level Plan



BUILDING 1 | View 1 Elevation



BUILDING 1 | View 2 Elevation

P1	Submission	SS	24/05/07
REV	DESCRIPTION	DEN	DATE



CLIENT

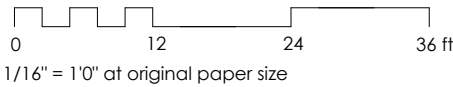
PROJECT
Lebanon NH

DRAWING STATUS
PLANNING

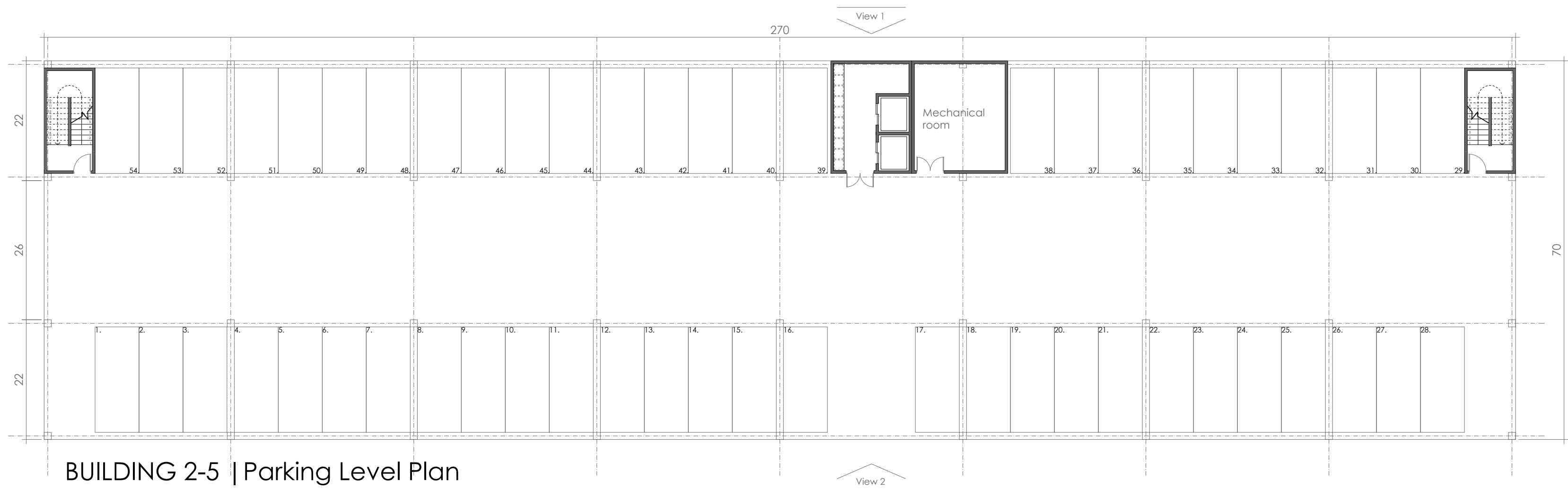
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DATE 24/05/07	DRAWN SS
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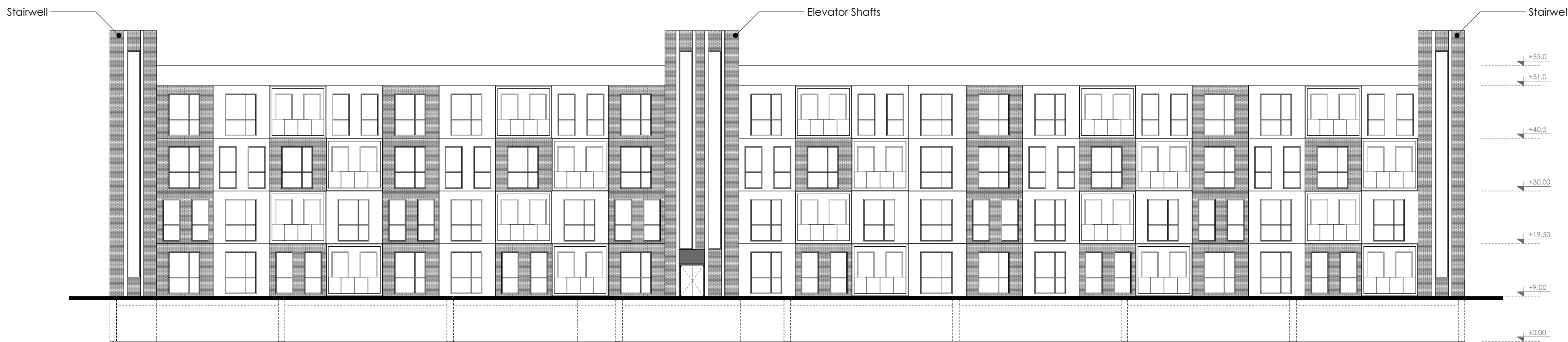
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+44 7473601166, www.studiointegrate.co.uk



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BUILDING 2-5 | Parking Level Plan



BUILDING 2-5 | View 1 | Mountain Elevation



BUILDING 2-5 | View 2 | Lake Elevation

P1	Submission	SS	24/05/07
REV	DESCRIPTION	DN	DATE



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PROJECT
Lebanon NH

DRAWING STATUS
PLANNING

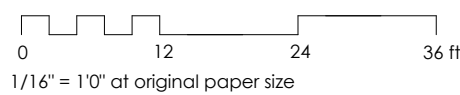
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BUILDING 2-5 | PROPOSED PLAN & ELEVATIONS

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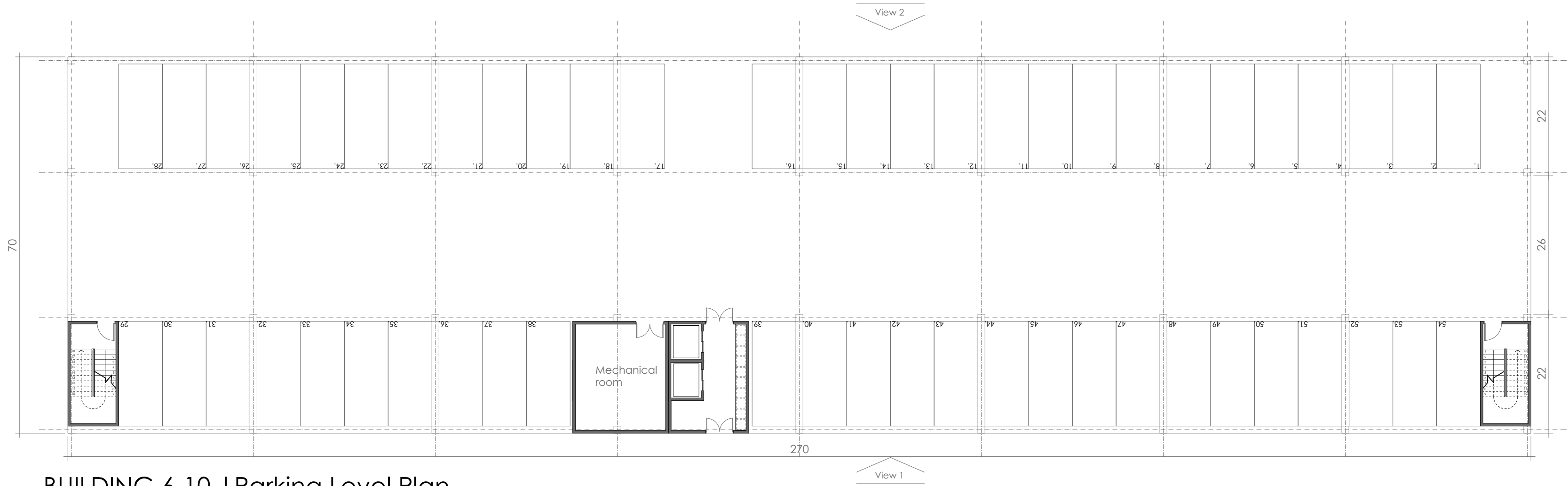
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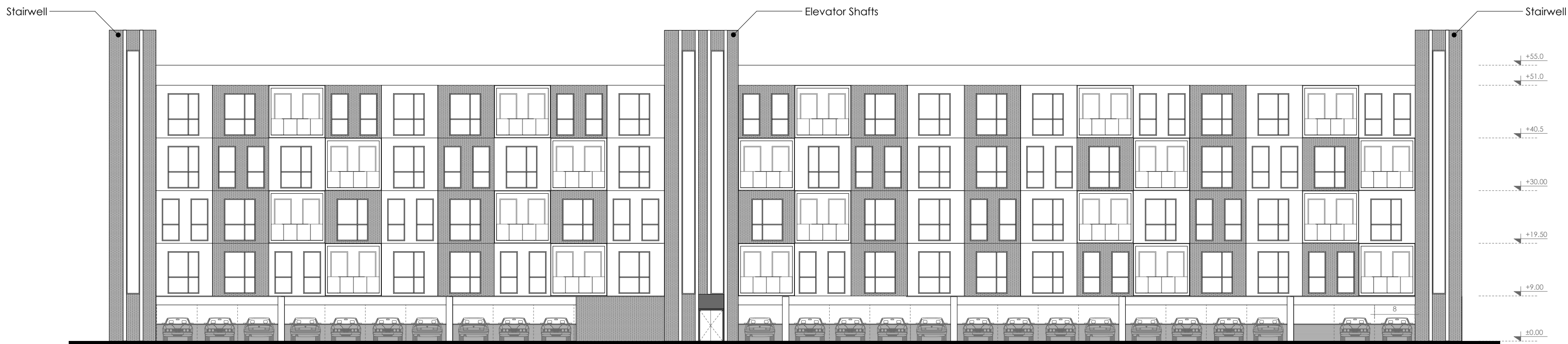
10, Russell Road, London, W14 8JA,
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BUILDING 6-10 | Parking Level Plan



BUILDING 6-10 | View 1 | Lake Elevation



BUILDING 6-10 | View 2 | Mountain Elevation

P1	Submission	SS	24/05/07
REV	DESCRIPTION	DN	DATE



CLIENT

PROJECT
Lebanon NH

DRAWING STATUS
PLANNING

DRAWING NAME
BUILDING 6-10 | PROPOSED PLAN & ELEVATIONS

DRAWING NO. 0089-1203-P1

REV P1

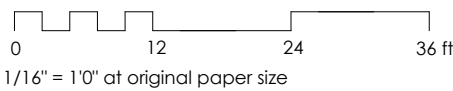
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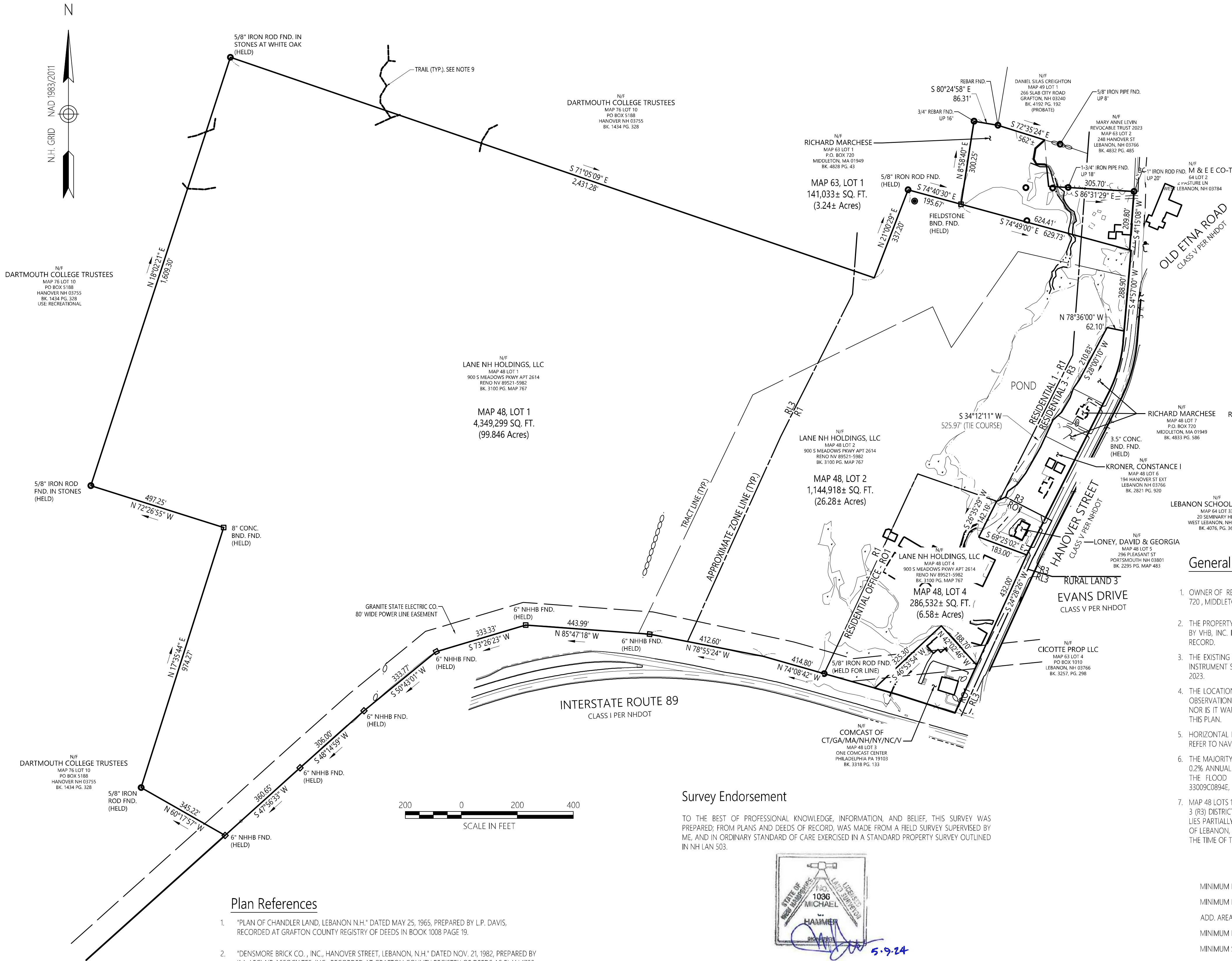
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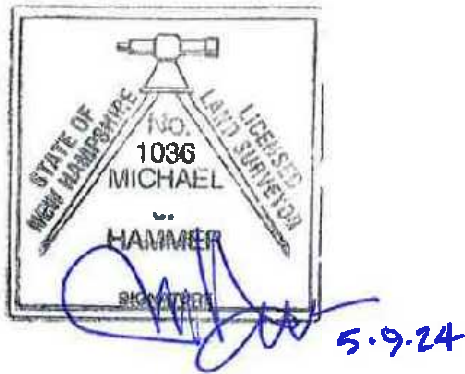


Plan References

- "PLAN OF CHANDLER LAND, LEBANON N.H." DATED MAY 25, 1965, PREPARED BY L.P. DAVIS, RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS IN BOOK 1008 PAGE 19.
- "DENSMORE BRICK CO., INC., HANOVER STREET, LEBANON, N.H." DATED NOV. 21, 1982, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 1700.
- "DENSMORE BRICK CO., INC., HANOVER STREET, LEBANON, N.H." DATED NOV. 21, 1982, REVISED OCT. 4, 1983, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 2089.
- "DENSMORE BRICK CO., INC., HANOVER STREET, LEBANON, N.H." DATED NOV. 21, 1982, REVISED APRIL 24, 1984, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 2934.
- "HODGES DEVELOPMENT CORP., HANOVER STREET, GRAFTON COUNTY, LEBANON, N.H." DATED APRIL 4, 1986, REVISED THROUGH 5/4/89, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 5625.
- "ELBTHAL REALTY TRUST, LEBANON, N.H." DATED JULY 3, 1980, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 6453.
- "STATE OF NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS, PLANS OF PROPOSED FEDERAL AID PROJECT, I 89-1(45)53, N.H. PROJECT NO. P-3821-B" UNDATED, ON FILE WITH NHDOT AS PLAN P5821.B.

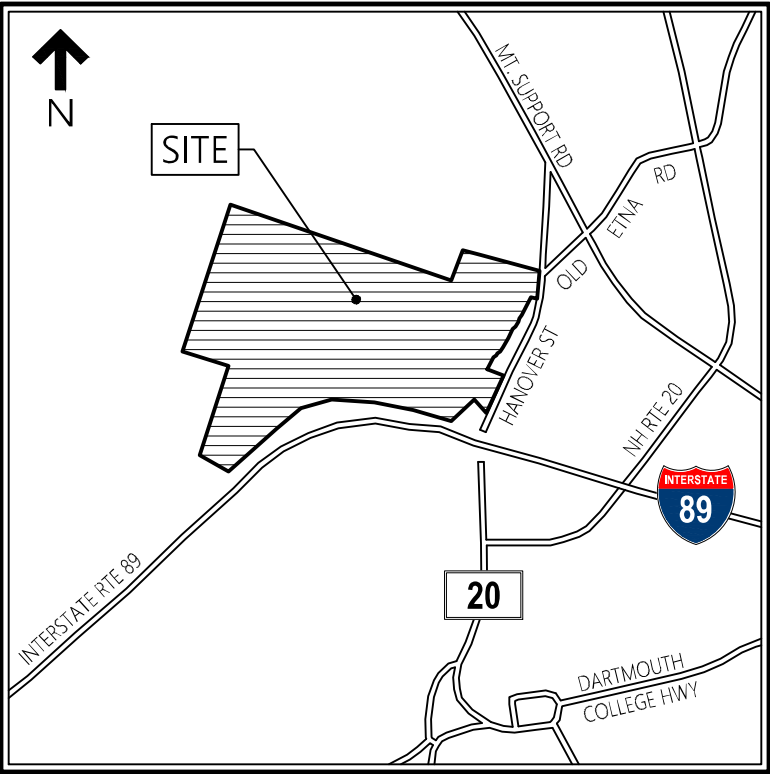
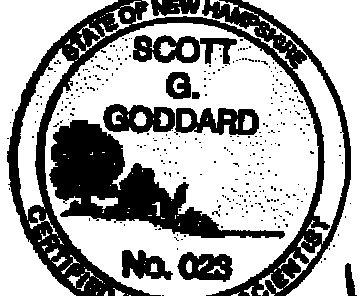
Survey Endorsement

TO THE BEST OF PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THIS SURVEY WAS PREPARED; FROM PLANS AND DEEDS OF RECORD, WAS MADE FROM A HELD SURVEY SUPERVISED BY ME, AND IN ORDINARY STANDARD OF CARE EXERCISED IN A STANDARD PROPERTY SURVEY OUTLINED IN NH LAN 503.



Wetland Endorsement

THIS IS TO CERTIFY THAT THE WETLANDS HAVE BEEN DELINEATED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE 1987 CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (TECHNICAL REPORT Y-87-1)



Locus Map
(NOT TO SCALE)

Legend

- ① DRAIN MANHOLE
- ② CATCH BASIN
- ③ SEWER MANHOLE
- ④ ELECTRIC MANHOLE
- ⑤ TELEPHONE MANHOLE
- ⑥ MANHOLE
- ⑦ HAND HOLE
- ⑧ WATER GATE
- ⑨ FIRE HYDRANT
- ⑩ GAS GATE
- ⑪ BOLLARD
- ⑫ STREET SIGN
- ⑬ LIGHT POLE
- ⑭ UTILITY POLE
- ⑮ GUY POLE
- ⑯ GUY WIRE
- ⑰ MONITORING WELL
- ⑱ FLOOD LIGHT
- ⑲ PEDESTRIAN SIGNAL
- ⑳ MAST ARM
- ㉑ FLASHING SIGNAL
- ㉒ WELL
- ㉓ MARSH
- ㉔ F.F.E. = 45.27'
- ㉕ FINISHED FLOOR ELEVATION
- ㉖ DOUBLE YELLOW LINE
- ㉗ DASHED WHITE LINE
- ㉘ EDGE OF PAVEMENT
- ㉙ VERTICAL GRANITE CURB
- ㉚ SLOPED GRANITE EDGE
- ㉛ GUARD RAIL
- ㉜ CHAIN LINK FENCE
- ㉝ DRAINAGE LINE
- ㉞ SEWER LINE
- ㉟ OVERHEAD WIRE
- ㊱ UNDERGROUND ELECTRIC
- ㊲ TELEPHONE LINE
- ㊳ GAS LINE
- ㊴ WATER LINE
- ㊵ STONE WALL
- ㊶ TREE LINE
- ㊷ LIMIT OF BANK
- ㊸ VEGETATED WETLAND BOUNDARY

General Notes

- OWNER OF RECORD OF TAX MAP 48 LOTS 1, 2, AND 4 IS BRICKYARD ONE NOMINEE TRUST, P.O. BOX 720, MIDDLETON, MASSACHUSETTS 01949. GCRD BOOK 4865 PAGE 128.
- THE PROPERTY LINES SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VHB, INC. IN SEPTEMBER AND OCTOBER OF 2022, APRIL 2023, AND FROM DEEDS AND PLANS OF RECORD.
- THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB, INC. FROM SEPTEMBER THRU NOVEMBER, 2022, AND APRIL 2023.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN.
- HORIZONTAL DATUM IS BASED ON NH GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO NAVD OF 1988.
- THE MAJORITY OF MAP 48, LOTS 1, 2 & 4 LIES WITHIN ZONE X (UNSHADED) (AREAS TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) WITH THE EXCEPTION OF THE POND (ZONE A) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR GRAFTON COUNTY, NEW HAMPSHIRE, MAP NUMBER 33009C0894E, EFFECTIVE DATE FEBRUARY 20, 2008.
- MAP 48 LOTS 1 & 2 LIE PARTIALLY WITHIN THE RURAL LAND 3 (RL3), RESIDENTIAL 1 (R1) AND RESIDENTIAL 3 (R3) DISTRICTS, MAP 48 LOT 4 LIES ENTIRELY WITHIN THE RESIDENTIAL OFFICE 1 (RO1), MAP 63 LOT 1 LIES PARTIALLY IN THE R1 AND R3 DISTRICTS AS SHOWN ON THE "OFFICIAL ZONING MAP OF THE CITY OF LEBANON, N.H.", DATED JUNE 1, 2020. DIMENSIONAL REQUIREMENTS FOR THE ZONING DISTRICTS AT THE TIME OF THIS SURVEY ARE:

	RL3	R1 & RO1	R1 & RO1	R1 & RO1
		(CLASS 1)	(CLASS 2)	(CLASS 3)
MINIMUM LOT AREA	10 AC.	10K SF	15K SF	40K SF
MINIMUM LOT WIDTH	N/A	75 FT	75 FT	100 FT
ADD. AREA PER D.U. AFTER TWO	N/A	3K SF	5K SF	15K SF
MINIMUM FRONT YARD SETBACK	50 FT	20 FT	20 FT	25 FT
MINIMUM SIDE YARD SETBACK	50 FT	15 FT	15 FT	25 FT
MINIMUM REAR YARD SETBACK	50 FT	20 FT	20 FT	30 FT
MAXIMUM BUILDING HEIGHT	35 FT	45 FT*	45 FT*	45 FT*
MAXIMUM BUILDING COVERAGE	1%	25%	20%	15%

* WITHIN THE R1 DISTRICT, THE BUILDING HEIGHT MAY BE INCREASED TO 55 FT TO ACCOMMODATE A PARKING STRUCTURE UNDERNEATH OR WITHIN THE PROPOSED BUILDING (SEE SECTION 308.4).

- THE WETLANDS SHOWN ON THIS PLAN WERE FLAGGED BY GODDARD CONSULTING, LLC AND LOCATED IN NOVEMBER 2022.
- THE TREE SYMBOL OUTLINE SHOWN ON THIS PLAN DOES NOT REPRESENT THE ACTUAL TREE CANOPY.
- FOOT TRAILS WERE OBSERVED CROSSING THE NORTH AND WEST LOT LINES AS SHOWN. NO DOCUMENTS WERE FOUND AT THE GCRD PROVIDING RIGHTS OF ACCESS OR USE.
- THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND MAY BE SUBJECT TO ADDITIONAL INFORMATION DISCLOSED IN SUCH.

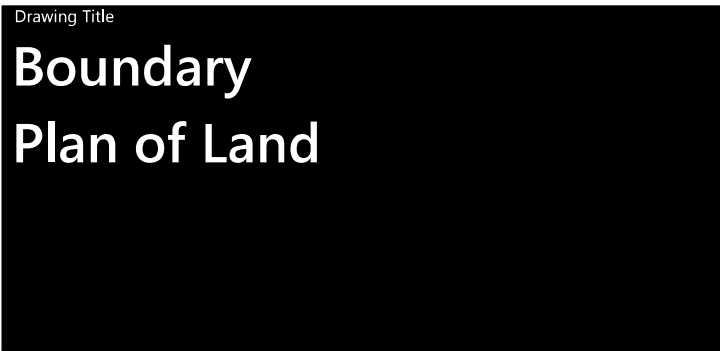
The Brickyard

Hanover Street
Lebanon, Grafton County, N.H.

No.	Revision	Date	Apprd.

Designed by	Checked by
Issued for	Date

April 1, 2024

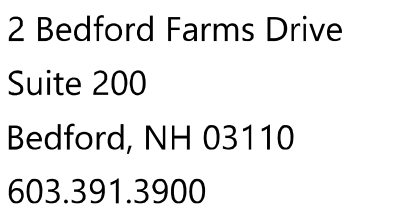


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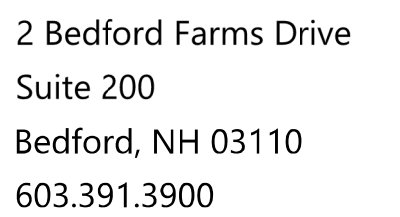
Sv-1

Sheet 1 of 3

Project Number
52933.00



- | | |
|--|----------------------------|
| | DRAIN MANHOLE |
| | CATCH BASIN |
| | SEWER MANHOLE |
| | ELECTRIC MANHOLE |
| | TELEPHONE MANHOLE |
| | MANHOLE |
| | HAND HOLE |
| | WATER GATE |
| | FIRE HYDRANT |
| | GAS GATE |
| | BOLLARD |
| | STREET SIGN |
| | LIGHT POLE |
| | UTILITY POLE |
| | GUY POLE |
| | GUY WIRE |
| | MONITORING WELL |
| | FLOOD LIGHT |
| | PEDESTRIAN SIGNAL |
| | MAST ARM |
| | FLASHING SIGNAL |
| | WELL |
| | MARSH |
| | F.F.E. = 45.27' |
| | FINISHED FLOOR ELEVATION |
| | DOUBLE YELLOW LINE |
| | DASHED WHITE LINE |
| | EDGE OF PAVEMENT |
| | VERTICAL GRANITE CURB |
| | SLOPED GRANITE EDGE |
| | GUARD RAIL |
| | CHAIN LINK FENCE |
| | DRAINAGE LINE |
| | SEWER LINE |
| | OVERHEAD WIRE |
| | UNDERGROUND ELECTRIC |
| | TELEPHONE LINE |
| | GAS LINE |
| | WATER LINE |
| | STONE WALL |
| | TREE LINE |
| | LIMIT OF BANK |
| | VEGETATED WETLAND BOUNDARY |



- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- BOLLARD
- STREET SIGN
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- MONITORING WELL
- FLOOD LIGHT
- PEDESTRIAN SIGNAL
- MAST ARM
- FLASHING SIGNAL

	FINISHED FLOOR ELEVATION
DYL	DOUBLE YELLOW LINE
DW/L	DASHED WHITE LINE
EQP	EDGE OF PAVEMENT
VGC	VERTICAL GRANITE CURB
SGE	SLOPED GRANITE EDGE
	GUARD RAIL
	CHAIN LINK FENCE
	DRAINAGE LINE
	SEWER LINE
-OH-W	OVERHEAD WIRE
E	UNDERGROUND ELECTRIC
	TELEPHONE LINE
-G	GAS LINE
-W	WATER LINE
	STONE WALL
	TREE LINE
	LIMIT OF BANK
WETLAND	VEGETATED WETLAND BOUNDARY

No.	Revision	Date	Appvd.
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Designed by	Checked by
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April 1, 2024

Drawing Number

Sv-3

Sheet 3 of 3

Project Number
52933.00

